Yellow: not safety-related image transformations Blue: not applicable for our approach

CV-HAZOP Checklist

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
0	Light Sources	No (not none)	Number	No light sources	No light available	Sensor will receive no light, but thermal noise or black current can cause wrong input
1	Light Sources	More (more of, higher)	Number	Many light sources (more light sources than expected)	Too much light	Overexposure (of whole image)
2	Light Sources	More (more of, higher)	Number	Many light sources (more light sources than expected)	Too few shadows	Algorithms using shadows can be confused
3	Light Sources	Less (less of, lower)	Number	Few light sources (fewer light sources than expected)	Too faint light (in parts of the scene)	Sensor will receive too faint light from some scene regions
4	Light Sources	Less (less of, lower)	Number	Few light sources (fewer light sources than expected)	Too many shadows	Algorithms can be confused by shadows
5	Light Sources	Less (less of, lower)	Number	Few light sources (fewer light sources than expected)	Very sharp shadows	
6	Light Sources	As well as	Number	Mirrors fake additional light sources	Light sources can appear at locations other than where they are	Algorithm confuses position of light sources
7	Light Sources	As well as	Number	Mirrors fake additional light sources	Increases shadow complexity	Algorithm detects more light sources than exist
8	Light Sources	As well as	Number	Mirrors fake additional light sources	Also as "More"	Also as "More"
9	Light Sources	Part of	Number	Part of expected light source configuration is missing	Light source configuration appears different than "usual"	Scene-relevant light-source or shadow-configuration not detected
10	Light Sources	Part of	Number	Part of expected light source configuration is missing	Shadow configuration appears different than "usual"	Scene-relevant light-source or shadow-configuration confused with other config.
11	Light Sources	Where else	Number	Light sources are arranged differently than expected	Characteristic arrangements are corrupted	CV alg. based on characteristic arrangements of lights fail
12	Light Sources	Spatial periodic	Number	Several light sources are configured in periodic manner	Consequences depend on combined param.	Hazards depend on combined param.
13	Light Sources	Spatial aperiodic	Number	See "spatial periodic"	See "spatial periodic"	See "spatial periodic"

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
14	Light Sources	Temporal periodic	Number	Number of light sources varies periodically	Illumination changes predictable with time	Illumination may change significantly between different exposures
15	Light Sources	Temporal aperiodic	Number	See "temporal periodic"	See "temporal periodic"	See "temporal periodic"
16	Light Sources	No (not none)	Position	Position of light source not known	Light source is not in direct view or not detected as such	An algorithm cannot relate a shadow from the scene to the respective light source and might confuse it with an object
17	Light Sources	No (not none)	Position	No finite position known, hence infinitely far away	Light rays are parallel	Rendering: this approximation can lead to shadows different from real ones
18	Light Sources	No (not none)	Position	No finite position known, hence infinitely far away	No measurable dimming within "terrestrial" distances due to distance from l.s.	
19	Light Sources	More (more of, higher)	Position	L.s. far away from scene	Lighting of scene can be too weak	See No
20	Light Sources	More (more of, higher)	Position	L.s. far away from scene	Also: See No	also: See Less Num
21	Light Sources	Less (less of, lower)	Position	L.s. near to observer	Lighting of scene can be too strong	Over- and underexposure in same scene possible
22	Light Sources	Less (less of, lower)	Position	L.s. near to observer	Light intensity may decrease (with increasing distance from l.s.) significantly within scene	Only parts close to l.s. sufficiently illuminated
23	Light Sources	Less (less of, lower)	Position	L.s. near to observer	Shadow direction may change significantly within scene	Different shadow directions may confuse algorithm
24	Light Sources	Less (less of, lower)	Position	L.s. near to observer	See More Num	
25	Light Sources	As well as	Position	L.s. can only be described with several pos.s	See Num	See Num
26	Light Sources	Part of	Position	Part of l.s. is visible	Light source at the image's edge looks different than in the middle	Overexposure (of image parts)
27	Light Sources	Part of	Position	Part of l.s. is visible	L.s. may look strange	Reflections of optics in image
28	Light Sources	Part of	Position	Part of l.s. is visible		Blooming
29	Light Sources	Part of	Position	Part of l.s. is		L.s. may be

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				visible		confused with another l.s. by CV alg.
30	Light Sources	Where else	Position	L.s. has a different position than expected	Algorithms needing a l.s. pos. are not applicable	The changed position will reduce the detection rate of an algorithm if it was trained using old scene data
31	Light Sources	Where else	Position	L.s. has a different position than expected	Shadows and object visibility are different than expected	
32	Light Sources	Where else	Position	L.s. has a different position than expected	See More & Less for Area (combination of both)	
33	Light Sources	Where else	Position	L.s. position cannot be assigned precisely (with a certain position)	See Where else Pos. (1)	See Where else Pos. (1)
34	Light Sources	Spatial periodic	Position	MISSING		
35	Light Sources	Spatial periodic	Position	MISSING		
36	Light Sources	Spatial aperiodic	Position	MISSING		
37	Light Sources	Temporal periodic	Position	L.s. position changes periodically	Illumination and shading (shadowing) varies predictably	Appearance and shading of same scene may change significantly but predictably ("learnable")
38	Light Sources	Temporal aperiodic	Position	L.s. position changes aperiodically	Illumination and shading (shadowing) varies unpredictably	Appearance and shading of same scene may change significantly and not predictably
39	Light Sources	Before	Position	L.s. moves along a path earlier than expected	See Other than	See Other than
40	Light Sources	Before	Position	L.s. moves away before Observer has started to gather information	See Less	See Less
41	Light Sources	After	Position	L.s. moves along a path later than expected	See Other than	See Other than
42	Light Sources	After	Position	L.s. moves into view after Observer has ended to gather information	See Less	See Less
43	Light Sources	In front of	Position	Two or more light sources in a row: The expected light	Wrong side of objects are lit	See Less

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				source is in the back		
44	Light Sources	In front of	Position	Two or more light sources in a row: The expected light source is in the back	Could be same as less, depending on strength of other light source	
45	Light Sources	In front of	Position	L.s. is part of scene (in front of observer)	L.s. can be directly visible from observer	Overexposure (of image parts) - local outshining
46	Light Sources	In front of	Position	L.s. is part of scene (in front of observer)		Reflections of optics in image
47	Light Sources	In front of	Position	L.s. is part of scene (in front of observer)		Virtual rays in image
48	Light Sources	In front of	Position	L.s. is part of scene (in front of observer)		blooming
49	Light Sources	Behind	Position	Two or more light sources in a row: The expected light source is in front	Could be same as more depending on strength of other light source	See more
50	Light Sources	Behind	Position	L.s. behind Observer	Objects illuminated with small angle between direction of light and direction of view	Small irregularities on object surfaces with same colours as surroundings may remain undetected
51	Light Sources	Behind	Position	L.s. behind Observer	Shadows hardly visible and short	Transparent objects may remain undetected
52	Light Sources	Behind	Position	L.s. behind Observer	Little contrasts on smooth surfaces	Reflecting areas oriented parallel to image plain may appear over exposed
53	Light Sources	Behind	Position	L.s. behind Observer	Observer can cast shadow onto the scene (has to be modelled if important for appl.)	
54	Light Sources	Faster	Position	L.s. moves faster than expected	L.s. stays shorter at a place than expected	Too weak light
55	Light Sources	Faster	Position	L.s. moves faster than expected	Relativistic effects	Underexposure
56	Light Sources	Faster	Position	L.s. moves faster than expected	Doppler Shift	Motion blur
57	Light Sources	Slower	Position	L.s. moves slower than expected	L.s. stays longer at a place than expected	Overexposure
58	Light Sources	Slower	Position	L.s. moves slower than expected	Too much light	
59	Light Sources	No (not none)	Area	Point-like l.s.	No l.s. extent (needed to be computed)	Extremely sharp shadows

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60	Light Sources	More (more of, higher)	Area	Large l.s.	Complex illumination computation needed	Diffuse shadows
61	Light Sources	More (more of, higher)	Area	Large l.s.		Low contrasts
62	Light Sources	Less (less of, lower)	Area	L.s. with small but not point-like extent	See No	See No
63	Light Sources	As well as	Area	L.s. with both small and large extents	Mixture of illumination models needed	Overexposure
64	Light Sources	As well as	Area	L.s. with both small and large extents		Anisotropic shadowing
65	Light Sources	Part of	Area	Part of l.s. (area) is visible (although Pos is outside)	See Pos	See Pos
66	Light Sources	Reverse	Area	L.s. shadows the area (because it is an object too)	Creates unexpected Texture	See Less and Other than Texture
67	Light Sources	Reverse	Area	L.s. shadows the area (because it is an object too)	-Too weak light on scene	
68	Light Sources	Spatial periodic	Area	See Num	See Num	
69	Light Sources	Spatial aperiodic	Area	Instead of focusing the light in the wanted area, the light source spreads the light into different patches	This creates a texture	See More texture
70	Light Sources	Temporal periodic	Area	Radiating area changes periodically	Illumination and shading (shadowing) changes predictably	Appearance and shading of scene may change (significantly) but predictably ("learnable")
71	Light Sources	Temporal aperiodic	Area	Radiating area changes aperiodically	Illumination and shading (shadowing) changes unpredictably	Appearance and shading of scene may change (significantly) and not predictably
72	Light Sources	Behind	Area	L.s. behind observer	See "Behind Pos."	See "behind pos."
73	Light Sources	Behind	Area	L.s. behind observer		Large area may remove contrasts to a high degree (completely)
74	Light Sources	Behind	Area	L.s. behind observer		Small area may cause to cast observer large shadow onto scene
75	Light Sources	No (not	Spectrum	Monochromatic	To little texture as	No colours can be

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		none)		light source	contrast is also created by different colours which are not visible under monochromatic light	distinguished in scene
76	Light Sources	No (not none)	Spectrum	Monochromatic light source	Colours in scene reduced to one frequency (strong information reduction)	If observer not sensitive to emitted colour, under exposure will likely result
77	Light Sources	More (more of, higher)	Spectrum	More continuous spectrum (l.s. has a very broad spectrum)	Little influence on scene colours by l.s.	Underexposure
78	Light Sources	More (more of, higher)	Spectrum	More continuous spectrum (l.s. has a very broad spectrum)	Very broad spectrum means the Intensity itself will be low as much of the energy is wasted in regions the sensor cannot use	
79	Light Sources	Less (less of, lower)	Spectrum	Less continuous spectrum (l.s. has a very sharp spectrum)	Only a few "colours" emitted by l.s.	Scene may appear in unusual colours
80	Light Sources	Less (less of, lower)	Spectrum	Less continuous spectrum (l.s. has a very sharp spectrum)	Like "No", if only one colour emitted	If observer is sensitive neither to emitted light nor to frequencies to which l.s. light is trans-formed by some object/process, underexposure may result
81	Light Sources	As well as	Spectrum	Light source has additional peak in spectrum where it's not expected	See Meaning	Ultra violet light in addition to visible light can cause unexpected effects in electronic sensor part of observer
82	Light Sources	As well as	Spectrum	Light source has additional peak in spectrum where it's not expected		-If additional peak is within the sensors response, this will create some unwanted overexposure
83	Light Sources	As well as	Spectrum	One l.s. has no or less spectrum and another has more	Illumination characteristics depend on orientation and position of l.s.s	Different kinds of illumination in different zones of scene can confuse observer
84	Light Sources	Part of	Spectrum	The light source only emits a part of the expected spectrum	Skewed spectrum	Algorithm can miss detections as the environment is very different from the expected/trained one

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85	Light Sources	Part of	Spectrum	The light source only emits a part of the expected spectrum	Objects appear in different colours than expected	
86	Light Sources	Reverse	Spectrum	The light source emits no light in the expected spectrum	Insufficient light in scene	Underexposure
87	Light Sources	Other than	Spectrum	A completely different spectrum is emitted	See Part of	CV algorithms relying on colour may be severely confused
88	Light Sources	Other than	Spectrum	completely different l.s. spectrum than usual in appl.	Illumination characteristics differ significantly from expected	
89	Light Sources	Where else	Spectrum	MISSING	Note: objects reemitting incoming light in other wavelengths to be treated in Object HAZOP	
90	Light Sources	Spatial periodic	Spectrum	The peaks within the light source spectrum are periodic	Special properties of resulting light	Interference
91	Light Sources	Spatial periodic	Spectrum	The peaks within the light source spectrum are periodic		
92	Light Sources	Spatial aperiodic	Spectrum	See also Texture		
93	Light Sources	Temporal periodic	Spectrum	Emitted spectrum changes periodically over time	"Colouring" of scene changes predictably over time	Colouring of captured image depends on period phase and frequency, but between single images it may vary significantly Þ "unsynchronized" CV alg. misinterprets scene "phase"
94	Light Sources	Temporal aperiodic	Spectrum	Emitted spectrum changes periodically over time	"Colouring" of scene changes unpredictably over time	Colouring of individual images depends on speed of changes, but may vary highly unpredictable Þ CV alg. misinterprets scene "phase"
95	Light Sources	Close	Spectrum	Peaks in the light source spectrum are too close to each other so that they become indistinguishable	Special colour contrasts in peak frequencies may be reduced	Special observers (filters) may be affected
96	Light Sources	Remote	Spectrum	Peaks in the light	Small textural light	Special observers

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				source spectrum which are expected to be close to each other are too far way so that they become separated instead of giving a joined response	contrasts in scene may become exaggerated	(filters) may be affected
97	Light Sources	Before	Spectrum	A change in l.s. spectrum occurs earlier than expected	The spectrum does not correspond with the expectation -> See Other Than	
98	Light Sources	Faster	Spectrum	Light source is moving towards/ away from the observer	Spectrum is skewed by speed of light source and/or observer-> Doppler effect, Away = Redshift, Towards = Blueshift	Different colouring of scene may confuse CV alg.
99	Light Sources	Faster	Spectrum	Spectrum changes faster than shutter time of observer	Image captured by observer has mixture of l.s. spectra	L.s. colour less significant for observer
100	Light Sources	Slower	Spectrum	MISSING		
101	Light Sources	No (not none)	Texture	Light source has no texture	Homogeneous scene illumination with respect to l.s. colour	Potential impact on dedicated CV algorithms (e.g. stereo on smooth objects with diffuse surface)
102	Light Sources	More (more of, higher)	Texture	Light source has too much texture	The light source produces a texture of its own by projecting a textured light beam (virtual texture)	Texture of emitted light is confused with texture on object. This creates false positive detections.
103	Light Sources	More (more of, higher)	Texture	Light source has too much texture		CV algorithm may be confused by virtual textures
104	Light Sources	Less (less of, lower)	Texture	The light source has not sufficient texture	Any structured light system dependent on texture fails	Structured light approach is not able to identify projected pattern
105	Light Sources	As well as	Texture	Light source projects combination of two textures, one expected, the other unexpected	Blending of lightings, complex illumination and shadowing	Texture of emitted light is interchanging with texture on object. This provokes missed detections.
106	Light Sources	As well as	Texture	Light source projects combination of two textures, one expected, the other unexpected		CV algorithms may be hampered by this illumination, in particular:
107	Light Sources	As well	Texture	Light source		Small changes in l.s.

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		as		projects combination of two textures, one expected, the other unexpected		configuration may cause large differences in responses of CV algorithm (e.g. Moiré)
108	Light Sources	Part of	Texture	Only a part of a projected textured light pattern is captured	Missing texture information in the scene	A structured light system is not able to identify the projection of a pattern
109	Light Sources	Other than	Texture	L.s. emits completely different l.s. texture than expected	Illumination characteristics (contrast) differ significantly from the expected	CV algorithms relying on illumination texture may be severely confused
110	Light Sources	Where else	Texture	Texture is as expected, but is projected into the wrong direction	See Beam	See Beam
111	Light Sources	Spatial periodic	Texture	Periodic texture	Pattern reduces contrast on existing texture (interference more likely)	CV algorithms can take virtual textures for real, in particular on smooth, monochrome surfaces
112	Light Sources	Spatial periodic	Texture	Periodic texture	"virtual" textures in scene can fake periodic textures	e.g. Moiré
113	Light Sources	Spatial aperiodic	Texture	Aperiodic texture	"virtual" textures in scene can fake stochastic textures	CV algorithms can take virtual textures for real, in particular on smooth, monochrome surfaces
114	Light Sources	Temporal periodic	Texture	Light texture changes periodically over time	Illumination contrast changes predictably over time	Appearance of captured image depends on period phase and frequency, but between single images it may vary significantly
115	Light Sources	Temporal aperiodic	Texture	Light texture changes aperiodically over time	Illumination contrast changes unpredictably over time	Appearance of individual images depends on speed of changes, but my vary highly unpredictable
116	Light Sources	Close	Texture	Light source emits a texture that is very similar to that of a different light source	Distinction between l.s. is hampered	Algorithm confuses this light source with another light source
117	Light Sources	Remote	Texture	Light source emits a texture that is very much different than the	See Other than	See Other than

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				expected (and, e.g. trained one)		
118	Light Sources	Before	Texture	A texture is projected to early	The wrong, or no texture projection is captured	Projection of texture (pattern) cannot be not detected
119	Light Sources	After	Texture	See Before	See Before	See Before
120	Light Sources	Faster	Texture	Texture changes faster than shutter time of observer	Image captured by observer has mixture of l.s. contrasts	L.s. contrasts less significant for observer
121	Light Sources	Faster	Texture	Texture changes faster than expected by CV alg.	Sequence of images may show significantly illumination characteristics	CV alg. may have problems with matching consecutive images
122	Light Sources	Faster	Texture	Texture changes faster than expected by CV alg.	Artefacts can occur because of temporal aliasing effects, whenever the texture is changing periodically and its frequency exceeds the half frame rate [Oppenheim+99]	CV alg. interprets the artefact rather than the measurement
123	Light Sources	No (not none)	Intensity	L.s. is off	No light from this l.s. in scene	Underexposure if no other light sources on
124	Light Sources	No (not none)	Intensity	L.s. is off		Captured camera noise leads to fake effects
125	Light Sources	More (more of, higher)	Intensity	L.s. is too strong	Too much light in scene	Overexposure of lit objects
126	Light Sources	As well as	Intensity	Strong and weak light sources mixed	Weak light sources are outshined by strong ones	If light source should be detected by CV algorithm, this may be hampered
127	Light Sources	As well as	Intensity	Strong and weak light sources mixed		Might exceed the intensity range of sensor
128	Light Sources	Other than	Intensity	Intensity of light source is completely different than expected by appl.	Scene too bright or too dim	Over or underexposure of relevant objects or scene elements
129	Light Sources	Temporal periodic	Intensity	The exposure time interval is not synchronized with the light source	Brightness of illuminated scene changes periodically over time	Brightness of captured image depends on period phase and frequency, but between single images it may vary significantly
130	Light Sources	Temporal aperiodic	Intensity	L.s. intensity changes aperiodically over	Brightness of illuminated scene changes	Brightness of individual images depends on speed of

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				time	aperiodically over time	changes, but may vary highly unpredictable
131	Light Sources	Close	Intensity	Two light sources have close intensity values	They are not distinguishable by their intensity	Algorithm is confused and misclassifies
132	Light Sources	Before	Intensity	Light source is switched off before a picture was taken	See No	See No
133	Light Sources	After	Intensity	Light source is switched on after a picture was taken	See no	See No
134	Light Sources	After	Intensity	Light source takes too much time to reach the expected intensity after being switched on	Increases runtime if recognized by the algorithm, see Less otherwise	See Less
135	Light Sources	After	Intensity	The aging light source delivers a different result as at its start	Change of texture over a longer time scope	Algorithm is confused by changing light source into thinking that the objects have changed
136	Light Sources	Faster	Intensity	Intensity changes faster than expected.	Image brightness depends on exposure time and duration	Over- or under exposure
137	Light Sources	Faster	Intensity	Intensity changes faster than expected.		Observer electronics (exposure control) gets confused when trying to compensate
138	Light Sources	Slower	Intensity	Intensity changes Slowly over time, e.g. at sunset or sunrise	Scene brightness changes significantly over longer time intervals	CV alg. may miss resulting scene changes
139	Light Sources	No (not none)	Beam properties	Beam width is infinitely small	This l.s. does not contribute to the scene illumination	As Num if Num==1
140	Light Sources	More (more of, higher)	Beam properties	Large beam angle, even omni-directional emission of light	All objects will be lit	Reflections in all shiny surfaces possible
141	Light Sources	Less (less of, lower)	Beam properties	Focused beam	Only fractions of objects will be lit	Large parts of scene may be dark
142	Light Sources	Less (less of, lower)	Beam properties	Focused beam		Unsmooth illumination of surfaces
143	Light Sources	Less (less of, lower)	Beam properties	Focused beam		Diffraction patterns possible
144	Light Sources	As well	Beam	Light source	Complex	Strange scene

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		as	properties	produces multiple beams	illumination model needed	illumination
145	Light Sources	As well as	Beam properties	Light source produces multiple beams		Confusing shadowing
146	Light Sources	Reverse	Beam properties	Beam angle is broad where it should be thin and the other way around	See Less/More	See Less/More
147	Light Sources	Reverse	Beam properties	Beam is pointing in the opposite direction than expected	See Less/More	See Less/More
148	Light Sources	Other than	Beam properties	Beam points in wrong direction	Too weak light on object	See Less Intensity
149	Light Sources	Other than	Beam properties	No preferred light direction ("shining medium")	Light comes from "everywhere"	No shadows
150	Light Sources	Other than	Beam properties	No preferred light direction ("shining medium")		
151	Light Sources	Where else	Beam properties	The beam points in the wrong direction	The illuminated area is displaced from the intended position	
152	Light Sources	Spatial periodic	Beam properties	See Texture		
153	Light Sources	Spatial aperiodic	Beam properties	See Texture		
154	Light Sources	Temporal periodic	Beam properties	Shape and direction of beam (width) changes periodically	Illumination and shading (shadowing) changes predictably	Appearance and shading of scene may change (significantly) but predictably ("learnable")
155	Light Sources	Temporal periodic	Beam properties	Shape and direction of beam (width) changes periodically	also see Texture	also see Texture
156	Light Sources	Temporal aperiodic	Beam properties	Shape and direction of beam (width) changes aperiodically	Illumination and shading (shadowing) changes unpredictably	Appearance and shading of scene may change (significantly) and not predictably
157	Light Sources	Temporal aperiodic	Beam properties	Shape and direction of beam (width) changes aperiodically	also see Texture	also see Texture
158	Light Sources	No (not none)	Wave properties	Light is neither polarized nor coherent	No interferences between light from different sources	Contrast increase with pol.filter will be diminished Þ Loss of contrast and thus misdetections
159	Light Sources	No (not none)	Wave properties	Light is neither polarized nor coherent	Distinction between light from different sources by	Observers relying on polarization or coherence will not

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					polarization is impossible	work
160	Light Sources	More (more of, higher)	Wave properties	Light of some source is more polarized or coherent than expected	Interference effects like diffraction rings may appear in the scene	Interference effects can disturb perception, e.g. may be confused with texture or objects, or obfuscate details
161	Light Sources	More (more of, higher)	Wave properties	Light of some source is more polarized or coherent than expected	Extinction of light intensity when observed with polarization filters	Underexposure (polarization may diminish light)
162	Light Sources	Less (less of, lower)	Wave properties	Light of some source is less polarized or coherent than expected	See No	See No
163	Light Sources	As well as	Wave properties	L.s. is coherent as well as polarized	Effects as described under More will combine	Scene may look completely differently than expected
164	Light Sources	As well as	Wave properties	The light of a coherent/ polarized l.s. gets mixed with light having a different wave property	See No	See No
165	Light Sources	Reverse	Wave properties	Wave properties of emitted light are inverted relative to expectations.	Change polarization plane by 90° or if circular reverse rotation direction	Observed effects can become inverse to expected ones
166	Light Sources	Other than	Wave properties	Wave property is other than expected,	Wave is linearly polarized instead of circular, or polarized instead of coherent	See Reverse
167	Light Sources	Spatial periodic	Wave properties	Wave properties depend periodically from part of light source where light is emitted	Polarization plane depends periodically from location within light source area where it is emitted	Visual effects depend on scene configuration, including observer location
168	Light Sources	Spatial periodic	Wave properties	Wave properties depend periodically from part of light source where light is emitted		Object appearance can be periodically modified in a way the observer is not able to cope with
169	Light Sources	Spatial periodic	Wave properties	Wave properties depend periodically from part of light source where light is emitted		Theoretically, these effects are predictable
170	Light Sources	Spatial aperiodic	Wave properties	Wave properties depend irregularly	Polarization plane depends	Same as Spatial periodic, but in an

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				from part of light source where light is emitted	stochastically from location within light source area where it is emitted	unpredictable way
171	Light Sources	Temporal periodic	Wave properties	Wave properties of emitted light are periodically modified.	Linear polarization plane rotates regularly over time	Visual effects depend on image capture time on Observer
172	Light Sources	Temporal periodic	Wave properties	Wave properties of emitted light are periodically modified.		Object appearance can be periodically modified in a way the observer is not able to cope with
173	Light Sources	Temporal aperiodic	Wave properties	Wave properties of emitted light are irregularly modified.	Linear polarization plane rotates irregularly over time	Visual effects depend on image capture time on Observer
174	Light Sources	Temporal aperiodic	Wave properties	Wave properties of emitted light are irregularly modified.		Object appearance can be modified in a way the observer is not able to cope with
175	Light Sources	Temporal aperiodic	Wave properties	Wave properties of emitted light are irregularly modified.		These effects are not predictable
176	Light Sources	Before	Wave properties	Generation of special wave properties happens earlier than expected	E.g. switch of polarization plane	If synchronization with observer or other object in scene is needed: expected effect may not occur
177	Light Sources	After	Wave properties	Generation of special wave properties happens earlier than expected	See Before	See Before
178	Medium	No (not none)	Transparency	Medium is not transparent	No light can pass through medium	Observer will not detect/react to anything engulfed within the medium
179	Medium	No (not none)	Transparency	Medium is not transparent	The scene is neither illuminated nor is the sensor capturing any light	-Is like a blocking object
180	Medium	More (more of, higher)	Transparency	Medium is clearer/more transparent than expected	More light can pass through	More contrast than expected could result in mismatches
181	Medium	More (more of, higher)	Transparency	Medium is clearer/more transparent than expected	Increases contrasts	Overexposure
182	Medium	More (more of, higher)	Transparency	Medium is clearer/more transparent than expected	The object is illuminated to a greater extend therefore more affected by the properties (e.g. non uniformities) of the	See l.s./Intensity/ More

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					l.s.	
183	Medium	Less (less of, lower)	Transparency	Medium is optically thicker than expected	Less light can pass through	Less contrast than expected could result in mismatches
184	Medium	Less (less of, lower)	Transparency	Medium is optically thicker than expected	Reduces contrasts	Underexposure
185	Medium	Less (less of, lower)	Transparency	Medium is optically thicker than expected		See l.s./Intensity/ Less
186	Medium	As well as	Transparency	Two different media have same optical thickness	It is not possible to use light intensity passing through the two media to distinguish between them	Borders between media hard/ impossible to detect
187	Medium	As well as	Transparency	Two different media have same optical thickness	Refraction index of both media is the same	Objects may remain undetected
188	Medium	As well as	Transparency	Two different media have a different optical thickness	Refraction occurs: changes the path of light to the object	Changed light-direction-dependent phenomena (shading, specular reflections ...)
189	Medium	As well as	Transparency	Two different media have a different optical thickness	Refraction occurs: changes the path of light from the object to the observer	The object appears to be displaced
190	Medium	Other than	Transparency	Medium has an unexpected Transparency	All effects caused by other keywords possible ? see there	All hazards described at other keywords possible ? see there
191	Medium	Temporal periodic	Transparency	Transparency changes periodically with time	Visibility/ appearance of scene changes periodically with time	CV alg. calibrated for a certain transparency has a periodically (and predictable) changing response quality
192	Medium	Temporal aperiodic	Transparency	Transparency changes aperiodically with time	Visibility/ appearance of scene changes aperiodically with time	CV alg. calibrated for a certain transparency has an aperiodically changing response quality, not predicable
193	Medium	Close	Transparency	At close range the transparency of a medium does not influence the light enough to be distinguishable		Example: Testing liquids by their colour might fail if the liquid quantities are very small because their colour is very faint
194	Medium	Remote	Transparency	Transparency decreases with (increasingly) remote distances	Medium transparency is declining with distance (transp. Is a function of the	Distant objects too faint to be detected

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
					thickness of medium which increases with distance)	
195	Medium	Faster	Transparency	A medium is moving very fast	Streaming effects smear out	Medium cannot be distinguished from (solid) objects
196	Medium	Slower	Transparency		Streaming effects remain distinguishable	Medium is detected as a distinct feature
197	Medium	No (not none)	Spectrum	Medium has no distinct colour	Medium does not change colours of objects seen through it	If transparency is high, medium may remain undetected although it should be detected
198	Medium	More (more of, higher)	Spectrum	Additive spectrum mixing caused by medium	Skewed colours	Failed detection as training data was obtained under unfiltered light
199	Medium	Less (less of, lower)	Spectrum	Medium acts as a filter and changes the light's spectrum	Skewed colours	Failed detection - since training data was obtained under unfiltered light
200	Medium	As well as	Spectrum	Medium has similar colour as nearby l.s./object	Low contrast	Objects and medium become indistinguishable
201	Medium	Reverse	Spectrum	Medium has very different colour as nearby l.s./object	"High contrast	Creates edges where none are expected "
202	Medium	Where else	Spectrum	Medium shifts transmitted spectra	Shifted colours	Failed detection as training data was obtained without medium
203	Medium	No (not none)	Texture	Medium is featureless	Medium does not affect visual appearance of objects	If also transparency is high, medium may remain undetected although it should be detected
204	Medium	More (more of, higher)	Texture	Medium is more texturized than expected	Object appearance can be significantly distorted, e.g. fragmented	Object recognition hampered
205	Medium	More (more of, higher)	Texture	Medium is more texturized than expected	Medium has an unexpected non-uniformity that casts a shadow	Medium can be misinterpreted as an object
206	Medium	More (more of, higher)	Texture	Medium is more texturized than expected		See l.s. More Texture
207	Medium	Less (less of, lower)	Texture	Medium has less non-uniformity than expected	See No	See No
208	Medium	As well as	Texture	Medium has a surface/non-uniformity that looks like an object/l.s.	See Meaning	Non-existing objects detected

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
209	Medium	As well as	Texture	Medium has a surface/non-uniformity that looks like another medium	See Meaning	Media are confused by CV alg.
210	Medium	Reverse	Texture	Texture of medium is inversed	See Other than	See Other than
211	Medium	Other than	Texture	Texture of medium is different than expected	Influences of medium on scene appearance is unexpected	Algorithms trained for a certain medium are confused
212	Medium	Other than	Texture	See As well as (1)	See As well as (1)	See As well as (1)
213	Medium	Other than	Texture	See As well as (2)	See As well as (2)	See As well as (2)
214	Medium	Where else	Texture	See Other than	See Other than (1)	See Other than(1)
215	Medium	Spatial periodic	Texture	Texture of medium is periodic (periodic density fluctuations)	Interference with other textures more likely	Projected spectrum may be misinterpreted as object spectrum
216	Medium	Spatial periodic	Texture	Texture of medium is periodic (periodic density fluctuations)	Medium projects periodic texture onto surfaces	Confusion with object texture by CV alg. possible
217	Medium	Spatial periodic	Texture	Texture of medium is periodic (periodic density fluctuations)	Transparency changes periodically throughout medium (in one or several directions)	One extended object may appear as several (through medium zones with more transparency
218	Medium	Spatial periodic	Texture	Texture of medium is periodic (periodic density fluctuations)	Can create pattern/ texture where there is no object	Misinterpretation of medium texture as object texture
219	Medium	Spatial aperiodic	Texture	Texture of medium is aperiodic (aperiodic density fluctuations)	Transparency changes aperiodically throughout medium (in one or several directions)	Opaque zones could be misinterpreted as solid objects
220	Medium	Spatial aperiodic	Texture	Texture of medium is aperiodic (aperiodic density fluctuations)	Decreases contrast	Scene appearance strongly depends on observer location and viewing direction
221	Medium	Temporal periodic	Texture	Texture of medium changes periodically over time	Texture changes predictable over time Þ scene appearance changes between consecutive capturings	See l.s.

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
222	Medium	Temporal aperiodic	Texture	Texture of medium changes aperiodically over time	Texture changes random over time Þ scene appearance changes between consecutive capturings	See l.s.
223	Medium	Close	Texture	See As well as/ More		
224	Medium	No (not none)	Wave properties	Medium destroys wave property (no coherency and no polarization afterwards)	If observer needs wave property to distinguish between different l.s./objects this medium would reduce information	Failed identifications due to missing wave properties
225	Medium	More (more of, higher)	Wave properties	Medium increases coherency or polarizes the light	Corresponding effects emanate or are increased	See l.s.
226	Medium	Less (less of, lower)	Wave properties	Medium decreases coherency or reduces the polarization of the light	See No	See No
227	Medium	As well as	Wave properties	Medium polarizes light as well as decreases coherency	See More	See More
228	Medium	Reverse	Wave properties	Wave property of passing light is inverted.	E.g. unpolarised light becomes polarized, or incoherent light becomes coherent.	See l.s.
229	Medium	Other than	Wave properties	Wave property of passing light is changed (in an unexpected way)	E.g. polarization plane of light is changed by 90 or if circular p. reverse rotation direction when passing through the medium	See Reverse
230	Medium	Spatial periodic	Wave properties	Wave properties of passing light are modified by medium in a spatial periodic or regular way	E.g. polarization plane depends periodically from location of medium where it passes through	See l.s.
231	Medium	Spatial aperiodic	Wave properties	Wave properties of passing light are modified by medium in a spatial irregular way	E.g. polarization plane depends stochastically from location of medium where it passes through	See l.s.
232	Medium	Temporal periodic	Wave properties	Wave properties of passing light are modified by medium in a temporally periodic way	See l.s.	See l.s.

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
233	Medium	Temporal aperiodic	Wave properties	Wave properties of passing light are modified by medium in a temporally irregular way	See l.s.	See l.s.
234	Medium	Remote	Wave properties	Medium changes wave properties with increasing distance	Light is polarized by scattering in medium (larger distance means more polarization)	Colours and contrasts depend on observer orientation if it uses polarization filter
235	Medium	Before	Wave properties	Change of wave properties of transmitted light happens before it is expected	See l.s.	See l.s.
236	Medium	After	Wave properties	Change of wave properties of transmitted light happens after it is expected	See l.s.	See l.s.
237	Medium	No (not none)	Particles	No particles in the medium	No particles in the medium which scatter transmitting light	If particles are needed to e.g. visualize flow dynamics, this will be hampered
238	Medium	No (not none)	Particles	No particles in the medium	The medium has no texture	
239	Medium	No (not none)	Particles	No information about Particles	It is not possible to decide if there are any particles in the medium	Correct recognition of medium is hampered or impossible
240	Medium	More (more of, higher)	Particles	More particles in the medium than expected	Particles in the medium scatter light and reduce transparency	Object recognition is (severely) reduced
241	Medium	More (more of, higher)	Particles	More particles in the medium than expected	Scene gets clustered/ congested by particles in medium	Particles are misinterpreted as texture
242	Medium	More (more of, higher)	Particles	More particles in the medium than expected	Distance of sight is decreased	Stereo vision can be heavily hampered
243	Medium	More (more of, higher)	Particles	More particles in the medium than expected	See Less Trans	See Less Trans
244	Medium	More (more of, higher)	Particles	Particles are large(r than expected)	Particles appear as distinct objects	Particles are misinterpreted as objects
245	Medium	More (more of, higher)	Particles	Particle size is bigger than the light's wavelength	Geometric Scattering	See Less Trans or More Texture
246	Medium	Less (less of, lower)	Particles	Less particles in the medium (than expected)	Too few particles for recognizing them as part of an "ensemble"	Particles are misinterpreted (if recognized at all)
247	Medium	Less	Particles	Less particles in	Background is more	See Trans

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
		(less of, lower)		the medium (than expected)	visible	
248	Medium	Less (less of, lower)	Particles	Less particles in the medium (than expected)	Distance of sight is increased	
249	Medium	Less (less of, lower)	Particles	Less particles in the medium (than expected)	See Trans	
250	Medium	Less (less of, lower)	Particles	Smaller particles than expected	Actual visual effects differ from anticipated ones	CV alg. misinterprets unexpected visual effects
251	Medium	Less (less of, lower)	Particles	Particle size is smaller than the light's wavelength	Rayleigh Scattering - colour of transmitted light is changed	Misinterpretation of colours
252	Medium	As well as	Particles	Particles of different kinds occur simultaneously	Mixture of appearances and optical effects	Reason of disturbances remain undetected by CV alg.
253	Medium	As well as	Particles	Particles are clustered together	Particle clusters can become arbitrarily large	Particle clusters are interpreted as real (relevant) objects
254	Medium	As well as	Particles	Particles are of the same size as the light's wavelength	Mie Scattering - fog effect	Vision hampered
255	Medium	Part of	Particles	Particles break up and form a spray of smaller particles	See More Particles than expected and Less Particle size than expected	See More Particles than expected and Less Particle size than expected
256	Medium	Other than	Particles	Other particles than expected	Scene appearance not as anticipated	Preconfigured CV alg. features can lead to wrong scene interpretation or high noise in results
257	Medium	Other than	Particles	Other particles than expected	See More for "other than no particles"	
258	Medium	Other than	Particles	Different types of particles are mixed in the medium	Different visual effects combined	Increased number of recognition errors
259	Medium	Where else	Particles	Particles fill up different parts of the scene with different density	Different areas of scene exhibit different visual effects	Different recognition quality throughout an image
260	Medium	Spatial periodic	Particles	Particles are periodically distributed	Anisotropic visual effects, i.e. depending on Observer position and viewing direction	Scene appearance depends on Observer position and viewing direction
261	Medium	Spatial aperiodic	Particles	Particles are aperiodically distributed	Typical distribution of particles	See More .. As well as
262	Medium	Temporal periodic	Particles	Particle distribution varies periodically over	Visual effects change periodically with time	Scene appearance changes periodically, therefore depends

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
				time		on moment of recording
263	Medium	Temporal periodic	Particles	Particle distribution varies periodically over time	See Trans	See Trans
264	Medium	Temporal aperiodic	Particles	Particle distribution varies aperiodically over time	Typical behaviour of particles	See Trans
265	Medium	Temporal aperiodic	Particles	Particle distribution varies aperiodically over time	See Trans	See More .. As well as
266	Medium	Close	Particles	Particles very close to Observer	Single particles may cover larger scene fractions	Single particles are confused with real scene objects
267	Medium	Close	Particles	Particles very close to Observer		Particle occludes objects in scene
268	Medium	Remote	Particles	Particles far away from Observer	No more individual particles resolvable, effects merge with those of Remote Trans	See Remote Trans
269	Medium	Remote	Particles	Particles far away from Observer	The particles blend into the background	
270	Medium	Behind	Particles	Particles behind object but before l.s.	Object silhouette affected	Object detection hampered
271	Medium	Faster	Particles	Particles move faster than expected	Motion blur of particles	Blurred particles obfuscate (parts of) scene Þ image recognition severely reduced
272	Medium	Faster	Particles	Light is scattered while traversing a density changing media	Brillouin Scattering	Object misinterpretation due to schlieren
273	Medium	Slower	Particles	Particles move slower than expected	Particle outline shapes are sharply resolved (instead of being blurred)	Cannot be compensated by temporal averaging - leads to artefacts
274	Medium	Slower	Particles	Particles move slower than expected		
275	Object	No (not none)	Position	Pos. cannot be defined/ detected	An object's "central" point cannot be defined	One object is reported as several
276	Object	No (not none)	Position	Pos. cannot be defined/ detected	Scene is missing reference points	An object is reported at wrong position
277	Object	No (not none)	Position	Pos. cannot be defined/ detected	Scene is filled by just one object	
278	Object	No (not none)	Position	Pos. cannot be defined/ detected	The part which identifies the position of an object is not within	

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
					the captured view field.	
279	Object	As well as	Position	Pos. is ambiguous	Position of Object cannot be clearly identified	CV alg. delivers wrong location of object
280	Object	As well as	Position	Pos. is ambiguous	See No	CV alg. reports some erroneous position coordinates while others are accurate
281	Object	As well as	Position	Pos. is ambiguous	Object is placed at another position than usual	False negative: object remains undetected
282	Object	As well as	Position	Pos. is ambiguous		False positive: object is reported as another object
283	Object	Other than	Position	Object is out of place for this scenery	Unexpected object	CV alg. cannot deal with the occurrence of the object and produces unexpected results
284	Object	Other than	Position	Obj. Position is assumed to be different because an ego motion is confused with an object motion	Observer and object pose are confused	Motion models fail in consecutive calculations
285	Object	Other than	Position	Obj. Position is assumed to be different because an ego motion is confused with an object motion	No problem as long as only the relative motion is of interest	
286	Object	Where else	Position	Pos. is "wrong" or impossible	Object is placed at a "forbidden" location	Entirely misinterpreted scene
287	Object	Where else	Position	Pos. is "wrong" or impossible		See Other than
288	Object	Spatial periodic	Position	Object can only be at special integral positions that have the same distance from each other	Most positions "illegal"	Objects at illegal positions misinterpreted
289	Object	Spatial aperiodic	Position	Objects have no deterministic spatial placing, e.g. can be free floating or randomly placed within the scene	All/Most positions considered to be "legal"	Too many possible positions for CV alg.
290	Object	Spatial aperiodic	Position	Objects have no deterministic spatial placing, e.g. can be free floating or randomly placed within the scene	More degrees of freedom than expected	

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
291	Object	Temporal periodic	Position	Obj. Pos. changes periodically	Position of object within scene depends on time of recording, but periodically (and hence predictable)	Mismatch of objects in consecutive images
292	Object	Temporal periodic	Position	Obj. Pos. changes periodically	Temporal aliasing, if frame rate of sensor is insufficient for the movements frequency	CV alg. interprets the aliasing-frequency instead of the real one
293	Object	Temporal aperiodic	Position	Obj. Pos. changes aperiodically	Position of object within scene depends on time of recording, not periodically (and hence not predictable)	Mismatch of objects in consecutive images
294	Object	Close	Position	Object Closer to Observer than expected	Object is larger (and covers more of the scene than expected	False positive: Object not correctly recognized
295	Object	Close	Position	Object Closer to Observer than expected	Object covers complete scene	Other parts of scene not (correctly) recognized
296	Object	Close	Position	Object Closer to Observer than expected		
297	Object	Close	Position	Object Closer to Observer than expected		
298	Object	Remote	Position	Object More Remote from Observer than expected	Object is smaller than expected	False positive: Object not correctly recognized
299	Object	Remote	Position	Object More Remote from Observer than expected	Object covers only a few pixels	False negative: Object is not detected as an object but merges into background
300	Object	Remote	Position	Object More Remote from Observer than expected	Object details are lost	
301	Object	Before	Position	Obj. moves along a path earlier than expected	See Other than	See Other than
302	Object	Before	Position	Obj. moves out of scene before Observer has started to gather information	Object is not in scene	False positive. non-existing object reported
303	Object	After	Position	Obj. moves into view after Observer has ended to gather information	See Before	See Before

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
304	Object	After	Position	Obj. moves along a path later than expected	See Other than	See Other than
305	Object	Faster	Position	Obj. moves faster than expected	Obj. stays shorter at a place than expected	Transversal motion blur
306	Object	Faster	Position	Obj. moves faster than expected	Relativistic effects	Temporal aliasing, see Temporal Periodic
307	Object	Faster	Position	Obj. moves faster than expected	Doppler Shift	
308	Object	Slower	Position	Obj. moves slower than expected	Obj. stays longer at a place than expected	Moving object is visible although it's supposed to be transparent (due to persistence of vision of the background)
309	Object	No (not none)	Size	Obj. is "infinitely small"	Obj. is too small to be detected by Observer	False negative: no object reported (object leaves no footprint in image)
310	Object	More (more of, higher)	Size	Obj. is larger than expected	Obj. has a size more similar to other objects than its own characteristic size	False positive: object is confused with some other object
311	Object	More (more of, higher)	Size	Obj. is larger than expected	Obj. is too large to be detected, because its edges outside of view	False negative: no object reported (too few details of object in image)
312	Object	More (more of, higher)	Size	Obj. is larger than expected		Depth of object not correctly recognized
313	Object	More (more of, higher)	Size	Obj. is larger than expected		
314	Object	More (more of, higher)	Size	Obj. is larger than expected		
315	Object	Less (less of, lower)	Size	Obj. is smaller than expected	Obj. has a size more similar to other objects than its own characteristic size	False positive: object is confused with some other object
316	Object	Less (less of, lower)	Size	Obj. is smaller than expected	Obj. is too small to be (correctly) detected by Observer	False negative: no object reported (object leaves no footprint in image)
317	Object	Less (less of, lower)	Size	Obj. is smaller than expected		
318	Object	As well as	Size	Obj. is both larger and smaller than expected	Obj. has a size more similar to other objects than its own characteristic size	False positive: object is confused with some other object
319	Object	As well	Size	Obj. is both larger	Obj. has a unusual	False negative: no

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
		as		and smaller than expected	length:width:height ratio (i.e.unusual elongation)	object reported
320	Object	As well as	Size	Obj. is both larger and smaller than expected		
321	Object	Part of	Size	Only Part of Obj. area is visible	Obj. is either partially occluded	Object is not correctly recognized
322	Object	Part of	Size	Only Part of Obj. area is visible	Obj. is located partially outside the field of view.	
323	Object	Part of	Size	Only Part of Obj. area is visible		
324	Object	Part of	Size	One of the Object extents is missing	Flat object or even thin wire	Object is misinterpreted
325	Object	Part of	Size	One of the Object extents is missing	Degenerated configuration of object surface	If looked at from the wrong view point, undetectable
326	Object	Part of	Size	One of the Object extents is missing		CV alg. fails because of a degenerated case
327	Object	Reverse	Size	Object is turned inside out	Exchange of inner and outer parts	Object not recognized or misinterpreted
328	Object	Other than	Size	Obj. has an Other Size than expected (than usual)	See More, Less, As well as	See More, Less, As well as
329	Object	Spatial periodic	Size	Obj. has a regular shape	Several symmetries possible	Detection of orientation hampered
330	Object	Spatial periodic	Size	Obj. has a regular shape	Obj. is too regular to distinguish different orientations	
331	Object	Spatial aperiodic	Size	Obj. has an irregular shape	No symmetries	Detection vulnerable to orientation
332	Object	Spatial aperiodic	Size	Obj. has an irregular shape		
333	Object	Spatial aperiodic	Size	Obj. has an irregular shape		
334	Object	Temporal periodic	Size	Obj. Size changes periodically	Obj. Size depends on time of recording, but periodically (and hence predictable)	Mismatch of objects in consecutive images
335	Object	Temporal periodic	Size	Obj. Size changes periodically	Temporal aliasing, if frame rate of sensor is insufficient for the movements frequency	CV alg. interprets the aliasing-frequency instead of the real one
336	Object	Temporal aperiodic	Size	Obj. Size changes aperiodically	Obj. Size depends on time of recording, not periodically (and hence not	Mismatch of objects in consecutive images

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
					predictable)	
337	Object	Close	Size	See Pos.		
338	Object	Remote	Size			
339	Object	Before	Size	Object size grows/shrinks/ pulses earlier than expected	Object's appearance other than expected	Misinterpretation of scene
340	Object	After	Size	Object size grows/shrinks/ pulses later than expected	Object's appearance other than expected	Misinterpretation of scene
341	Object	Faster	Size	Obj. size changes faster than expected	Obj. shrinks/ increases/pulses remarkably during exposure	Radial motion blur
342	Object	Faster	Size	Obj. size changes faster than expected	Temporal aliasing, if frame rate of sensor is insufficient for the movements frequency	CV alg. interprets the aliasing-frequency instead of the real one
343	Object	Slower	Size	Obj. size changes slower than expected	Obj. shrinks/ increases/pulses undetectably during exposure	Missing of variation in size leads to wrong scene interpretation (in image sequences)
344	Object	No (not none)	Orientation	Obj. has no (specific, preferred) orientation	Obj. can be present in any orientation	Object is recognized but orientation is still unknown
345	Object	No (not none)	Orientation	Orientation of Obj. is not (easily) recognizable	See Spatial periodic Size	See Spatial periodic Size
346	Object	More (more of, higher)	Orientation	Obj. has a more unusual Orientation than expected	Obj. is present in scene in unusual orientation	Obj. is not correctly recognized
347	Object	Less (less of, lower)	Orientation	Obj. has a less usual Orientation than expected	See More	See More
348	Object	As well as	Orientation	Object points at multiple directions	Object's orientation is ambiguous	Wrong orientation taken as the "desired one" by CV alg.
349	Object	Part of	Orientation	Part of orientation is unusual	See Meaning	Obj. is not correctly recognized
350	Object	Part of	Orientation	Part of orientation is unusual		Obj. is correctly recognized, but its orientation not
351	Object	Reverse	Orientation	Orientation is opposite to usual	All orientation angles are inverted	See Part of
352	Object	Other than	Orientation	Orientation is other than expected	See More, Less, Part of, Reverse	See More, Less, Part of, Reverse
353	Object	Where else	Orientation	Obj.s orient. depends on Pos.	Object reels or staggers while moving through the	Object's recognition hampered

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
					scene	
354	Object	Spatial periodic	Orientation	Object can only be oriented in discrete steps	Only a limited number of orientations possible	CV alg. might expect a continous range and interpolate between the discrete steps thus producing an invalid result
355	Object	Spatial aperiodic	Orientation	Object can be oriented in any direction	Unlimited number of orientations possible	Object not correctly recognized in all orientations
356	Object	Temporal periodic	Orientation	Obj. orient. changes periodically	Obj. orient. depends on time of recording, but periodically (and hence predictable)	Mismatch of objects in consecutive images
357	Object	Temporal periodic	Orientation	Obj. orient. changes periodically	If the frequency of the orientation changes exceeds half of the frame rate temporal aliasing occurs	The virtual frequency of aliasing is treated for the actual one
358	Object	Temporal periodic	Orientation	Obj. orient. change deviates from prediction	Obj. orient. depends on time of recording, though not periodically but still predictable	Misinterpretation of temporal progress of scene
359	Object	Temporal aperiodic	Orientation	Obj. orient. changes aperiodically	Obj. orient. depends on time of recording, not periodically (and hence not predictable)	Mismatch of objects in consecutive images
360	Object	Close	Orientation	Obj. is oriented such that parts of object are close to Observer	Extreme perspective	Obj. is not correctly recognized
361	Object	Remote	Orientation	n/a		
362	Object	Before	Orientation	Orientation changes before expected	See Other Than Pos	Obj. is not correctly recognized
363	Object	Before	Orientation	Analogue to Size	See Size	See Size
364	Object	After	Orientation	Analogue to Size	See Size	See Size
365	Object	Faster	Orientation	Orient. changes faster than expected	Obj. rotates remarkably during exposure	Rotational motion blur
366	Object	Faster	Orientation	Orient. changes faster than expected	See Temporal periodic for aliasing	See Temporal periodic
367	Object	No (not none)	Complexity	Object has No Complexity	Object has no features which support identification and recognition - extremely simple object	Object not detected
368	Object	No (not	Complexity	Object has No		Object detected, but

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
		none)		Complexity		not identified
369	Object	No (not none)	Complexity	Object has No Complexity		Object detected, but aspects such as position not identifiable
370	Object	More (more of, higher)	Complexity	Object is more complex than expected	Object has features or feature combinations - shape, texture, transparency - which make its correct recognition difficult	Object is not correctly recognized
371	Object	More (more of, higher)	Complexity	Object is more complex than expected		Parts of object not recognized or misinterpreted,
372	Object	More (more of, higher)	Complexity	Object is more complex than expected		
373	Object	More (more of, higher)	Complexity	Object is more complex than expected		
374	Object	More (more of, higher)	Complexity	Object is more complex than expected		
375	Object	Less (less of, lower)	Complexity	Object is less complex than expected	Object misses features or feature combinations which are expected or relevant for its kind	Parts of object not or not correctly recognized
376	Object	Less (less of, lower)	Complexity	Object is less complex than expected	Object lacks natural features	An insufficient amount of natural features leads to faulty/no results in 3D reconstruction or self-localisation
377	Object	As well as	Complexity	Object has several distinct complexities or misses some usual one	Object's appearance strongly depends on orientation	Object is recognized differently from different sides and in different distances
378	Object	As well as	Complexity	Object has several distinct complexities or misses some usual one	Object's appearance strongly depends on its distance	
379	Object	Part of	Complexity	See Less	Object's shape is inverted, e.g. bumps are pits, smooth parts are rough etc.	Object is confused with some other
380	Object	Part of	Complexity	See Less		Object parts are confused
381	Object	Reverse	Complexity	Object's shape is contrary to expected	Like Meaning	Object is confused with some other

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
382	Object	Reverse	Complexity	Object's shape is contrary to expected		Object is not recognized at all
383	Object	Other than	Complexity	Object has a complete different complexity (shape) than expected	Parts of object are identical	Mismatch of object parts in stereo lead to wrong depth or shape recognition
384	Object	Other than	Complexity	Object has a complete different complexity (shape) than expected		Mismatch of object parts in image sequences lead to wrong movement estimation
385	Object	Spatial periodic	Complexity	Object has spatially periodic shape	Parts of objects are similar to different detail-levels of themselves (fractal))	Object's distance is wrongly computed
386	Object	Spatial periodic	Complexity	Object has spatially periodic shape		
387	Object	Spatial aperiodic	Complexity	Object has spatially aperiodic shape	All object parts differ from each other, and all parts are relevant	Object is not correctly recognized, if not enough of its parts visible
388	Object	Spatial aperiodic	Complexity	Object has spatially aperiodic shape	All object parts differ from each other, but not each part is relevant	Object is not correctly recognized, if too close
389	Object	Spatial aperiodic	Complexity	Object has spatially aperiodic shape		Object is not correctly recognized, if not enough relevant parts visible
390	Object	Spatial aperiodic	Complexity	Object shape has symmetries	Some object parts are symmetric counterparts of others	Object is not correctly recognized, if symmetry invisible
391	Object	Temporal periodic	Complexity	Object shape changes periodically or at least predictable	See Orientation	See Orientation
392	Object	Temporal periodic	Complexity	Object shape changes periodically or at least predictable		
393	Object	Temporal aperiodic	Complexity	Object shape changes aperiodically	See Orientation	See Orientation
394	Object	Close	Complexity	Parts close to Observer show more Compl. than remote ones	Object exhibit decreasing LOD along view axes	Object not correctly recognized
395	Object	Before	Complexity	Desired complexity degree occurs before it is expected	Complexity is not captured at its peak	A simplified model is assumed
396	Object	Before	Complexity	Analogue to Size	See Size	See Size

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
397	Object	After	Complexity	Desired complexity degree occurs after it is expected	See Before	See Before
398	Object	After	Complexity	Analogue to Size	See Size	See Size
399	Object	Faster	Complexity	Object shape changes faster than expected	See Meaning	Object is not correctly recognized
400	Object	Faster	Complexity	Object shape changes faster than expected	Aliasing if periodical change has too high a frequency	Failed re-identification in consecutive images of a (video) sequence
401	Object	Faster	Complexity	Object shape changes faster than expected		Heterogeneous motion blur
402	Object	Faster	Complexity	Object shape changes faster than expected		Temp aliasing effect causes interpretation of a virtual frequency
403	Object	No (not none)	Level of detail	No differences in LOD at different distances (only one LOD)	Object looks same if small and close or large and remote	If Object can have different sizes: size and distance are confused
404	Object	More (more of, higher)	Level of detail	Object has more LOD than expected	Object looks more different at different distances than expected	Level of detail might not be captured due insufficient spatial resolution
405	Object	More (more of, higher)	Level of detail	Object has more LOD than expected		Object is not recognized at all or not correctly at certain distances
406	Object	More (more of, higher)	Level of detail	Object has more LOD than expected		
407	Object	Less (less of, lower)	Level of detail	Object has less LOD than expected	Object looks less different at different distances than expected	CV alg. expects more structures at zoom-in for better classification but these structures are not present
408	Object	Less (less of, lower)	Level of detail	Object has less LOD than expected		
409	Object	Less (less of, lower)	Level of detail	Object has less LOD than expected		
410	Object	As well as	Level of detail	Object has both more and less LOD than expected	Depending on orientation, Object looks either more or less different at different distances than expected	Depending on orientation, object is not correctly recognized
411	Object	Part of	Level of detail	Part of the Object has unexpected LOD	See As well as	See As well as
412	Object	Reverse	Level of	LOD changes with	Object looks	Object is (likely) not

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
			detail	increasing distance inversely to expected	differently from expected at all (at least many) distances	correctly recognized at many distances
413	Object	Other than	Level of detail	LOD is other than expected	See More, Less, Part of, Reverse	See More, Less, Part of, Reverse
414	Object	Temporal periodic	Level of detail	LOD changes periodically	LOD depends on time of recording, but periodically (and hence predictable)	Object is sometimes not correctly recognized
415	Object	Temporal aperiodic	Level of detail	LOD changes aperiodically	LOD depends on time of recording, not periodically (and hence not predictable)	See Temporal periodic
416	Object	Close	Level of detail	Object has unexpected LOD at small distance	At close-ups, Object looks differently than expected	If too close, Object is not correctly recognized
417	Object	Remote	Level of detail	Object has unexpected LOD at large distance	If remote, Object looks differently than expected	If too far away, Object is not correctly recognized
418	Object	Before	Level of detail	Analogue to Size	See Size	See Size
419	Object	After	Level of detail	Analogue to Size	See Size	See Size
420	Object	Faster	Level of detail	LOD changes faster than expected	See Compl.	See Compl.
421	Object	No (not none)	Spectrum	Object has no specific colour	Object's colour fully depends on incoming light, i.e. it reflects all light as received	Object is not recognized at all (e.g. a white wall or a mirror)
422	Object	No (not none)	Spectrum	Object has no specific colour		Object is confused with that of projected image (e.g. a video projection wall)
423	Object	No (not none)	Spectrum	Object has no specific colour		
424	Object	No (not none)	Spectrum	Object has no specific colour		
425	Object	No (not none)	Spectrum	Object is strictly mono-coloured	Object filters incoming light strongly. If it consists of frequencies different from the object's ones, the object becomes dark	Underexposure (object appears darker than expected
426	Object	No (not none)	Spectrum	Object is strictly mono-coloured		
427	Object	More (more of, higher)	Spectrum	Object has more (specific) colour(s) than	Coloured illumination can change appearance	Colour distortion if illuminated with different colour

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
				expected	significantly	
428	Object	More (more of, higher)	Spectrum	Object has more (specific) colour(s) than expected		Underexposure, if illuminated with too different colour
429	Object	More (more of, higher)	Spectrum	The scene contains more of a certain colour than expected	Auto white balance of the observer is confused by to many occurrences of a certain colour within the scene.	Captured image has different white balance
430	Object	Less (less of, lower)	Spectrum	Object has less (specific) colour(s) than expected	Colour is no significant identification property	Object not (correctly) recognized
431	Object	Less (less of, lower)	Spectrum	Object has less (specific) colour(s) than expected		
432	Object	As well as	Spectrum	Object has both more and less (specific) colour than expected	Combination of more and less	See More and Less, depending on orientation
433	Object	As well as	Spectrum	Object has both more and less (specific) colour than expected	Orientation can change appearance unexpectedly	
434	Object	Other than	Spectrum	Object has different colour(s) than expected	Colour can be a misleading identification property	Object not (correctly) recognized
435	Object	Temporal periodic	Spectrum	Colour changes periodically	Obj. Colour depends on time of recording, but periodically (and hence predictable)	Mismatch of objects in consecutive images
436	Object	Temporal periodic	Spectrum	Colour changes periodically	Or at least predictable	Periodically incorrect recognition of object
437	Object	Temporal aperiodic	Spectrum	Colour changes aperiodically	Obj. Colour depends on time of recording, not periodically (and hence not predictable)	Mismatch of objects in consecutive images
438	Object	Temporal aperiodic	Spectrum	Colour changes aperiodically		Aperiodically incorrect recognition of object
439	Object	Before	Spectrum	Analogue to Size	See Size	See Size
440	Object	After	Spectrum	Analogue to Size	See Size	See Size
441	Object	After	Spectrum	After the object has reached a certain age it has less colour	Colour information is less meaningful	Object not (correctly) recognized
442	Object	Faster	Spectrum	Colour changes faster than expected	See Meaning	Object's state is misinterpreted

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
443	Object	Slower	Spectrum	Colour changes slower than expected	See Meaning	See Faster
444	Object	No (not none)	Texture	Object has no texture	Object is either monochrome, or is highly reflective or transparent	Texture-based CV alg. will not work
445	Object	No (not none)	Texture	Object has no texture		Less significant points (corners/ edges) can be detected
446	Object	More (more of, higher)	Texture	Object has more texture than expected	Texture can be misleading	Object not correctly recognized
447	Object	More (more of, higher)	Texture	Object has more texture than expected		Texture-sensible CV alg is confused
448	Object	More (more of, higher)	Texture	Object has more texture than expected		Virtual object is taken for real
449	Object	Less (less of, lower)	Texture	Object has less texture than expected	Texture is no significant identification property	Texture-based CV alg. is hampered
450	Object	As well as	Texture	Object has a combination of (No,) More and Less texture	Object's appearance deviates from expected one	Object not correctly recognized
451	Object	As well as	Texture	Object has a mixture of periodic and aperiodic texture	Semi-periodic texture: periodic at coarse LOD, but differences in detail	Object not correctly recognized
452	Object	As well as	Texture	Texture resembles silhouette of another object	The Texture is misinterpreted as the other object	Object recognition reports a false positive
453	Object	Part of	Texture	Object has only part of expected texture	Parts of expected texture are missing	See Less
454	Object	Reverse	Texture	Object's texture is inverted	Object looks like its "negative"	Object confused or not recognized
455	Object	Other than	Texture	Object has a completely different texture than expected	Texture is a misleading object property	Object is confused with some other or not recognized at all
456	Object	Where else	Texture	Textures are located on objects at other places than expected	The parts of object that are expected to be textured are empty and vice versa	Object parts are confused
457	Object	Spatial periodic	Texture	Obj.texture is periodic	Same appearance of texture on different parts of objects	Object parts are confused
458	Object	Spatial periodic	Texture	Obj.texture is periodic	If the period undercuts half the resolution of the observer spatial	Stereo alg.s compute wrong depth maps due to mismatch of texture

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
					aliasing occurs	cells
459	Object	Spatial aperiodic	Texture	Obj. texture is aperiodic	Texture does not precisely repeat, but variations are irrelevant	Irregular (stochastic) mismatches in stereo images
460	Object	Spatial aperiodic	Texture	Obj. texture is aperiodic	Texture does not precisely repeat, but variations are relevant	Textures are confused, leading to confusion of texture-carrying object(part)s
461	Object	Temporal periodic	Texture	Obj. texture changes periodically	Obj. Texture depends on time of recording, but periodically (and hence predictable)	De-synched scene interpretation causes mismatch of objects in consecutive images
462	Object	Temporal periodic	Texture	Obj. texture changes periodically		
463	Object	Temporal periodic	Texture	Obj. texture changes periodically	If the frequency exceeds the frame rate of the observer temporal aliasing occurs	The aliased frequency is treated as the actual one
464	Object	Temporal aperiodic	Texture	Obj. texture. changes aperiodically	Obj. Texture depends on time of recording, not periodically (and hence not predictable)	Mismatch of objects in consecutive images
465	Object	Close	Texture	Texture only recognizable if Obj. close to Observer	Small texture, smears out at larger distances	Object incorrectly recognized at larger distances
466	Object	Close	Texture	Two similar textures are touching on the same object	Borders between the textures are barely visible	Object recognition hampered, if relevant parts are to be distinguished by their texture
467	Object	Remote	Texture	Texture only recognizable if obj. at remote distance from observer	Large texture, not fully recognizable at small distances	Object incorrectly recognized at smaller distances
468	Object	Remote	Texture	Two very different textures are touching on the same object	Borders between the textures create strong contrast there	Object recognition hampered, if border between textures creates new visual artifacts
469	Object	Faster	Texture	Texture changes Faster than expected	Object appearance changes during recording - texture smeared out	Texture not recognized
470	Object	Faster	Texture	Texture changes Faster than expected	If periodic aliasing can occure (see temporal periodic)	
471	Object	Slower	Texture	Texture changes Slower than	See Meaning	Object's state is misinterpreted

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
				expected		
472	Object	Slower	Texture	Texture changes Slower than expected		
473	Object	Slower	Texture	Texture changes Slower than expected		
474	Object	Slower	Texture	Texture changes Slower than expected		
475	Object	No (not none)	Reflectance	Obj. has no reflectance	"No light reflected	if not transparent, object appears very dark - no features visible"
476	Object	No (not none)	Reflectance	Obj. has no reflectance		Object confused with shadow
477	Object	No (not none)	Reflectance	Obj. has no reflectance		Object not recognized
478	Object	More (more of, higher)	Reflectance	Obj. has much Refl. (more than expected)	Shiny surface - mirror	Object not recognized
479	Object	More (more of, higher)	Reflectance	Obj. has much Refl. (more than expected)	Overexposure of the observer	Reflected objects taken for real
480	Object	Less (less of, lower)	Reflectance	Obj. has little Refl. (less than expected)	Dull surface - diffuse reflection	See No
481	Object	As well as	Reflectance	Obj. has both shiny and dull surface	Diffuse reflection with highlight/glare	Object recognition distorted by glares
482	Object	As well as	Reflectance	Obj. has both shiny and dull surface		Local overexposure due to glares
483	Object	Part of	Reflectance	Obj. has only part of expected reflectance	Object appears more dull or less shiny than expected	Obj. confused with others
484	Object	Reverse	Reflectance	Obj. reflects into inverse direction	Obj. appears to violate the reflection law (reflection angle = incidence angle)	CV alg. is confused
485	Object	Reverse	Reflectance	Obj. reflects into inverse direction		See More for retroreflectance
486	Object	Reverse	Reflectance	Obj. reflects into inverse direction		
487	Object	Reverse	Reflectance	The parts that are expected to be reflecting are dull and vice versa	Special case of Other than	See Other than
488	Object	Other than	Reflectance	Obj. has other refl. properties than expected	Obj.s appearance is (massively) changed	Object not (correctly) recognized
489	Object	Where else	Reflectance	There are multiple reflections on different parts of the object	See As well as	See As well as

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
490	Object	Spatial periodic	Reflectance	Reflecting surface has spatially periodic changing reflectance properties	Obj.'s appearance is sensitive to the relative positioning of l.s., obj., and obs., but predictable	Output of CV alg. strongly depends on its position
491	Object	Spatial periodic	Reflectance	Reflecting surface has spatially periodic changing reflectance properties		
492	Object	Spatial periodic	Reflectance	Reflecting surface has spatially periodic changing reflectance properties		
493	Object	Spatial aperiodic	Reflectance	Reflecting surface has spatially aperiodic changing reflectance properties	See Spatial periodic, but not predictable	See Spatial periodic
494	Object	Temporal periodic	Reflectance	Refl. changes periodically with time	Obj. Refl. depends on time of recording, but periodically (and hence predictable)	Mismatch of objects in consecutive images
495	Object	Temporal aperiodic	Reflectance	Refl. changes aperiodically with time	Obj. Refl. depends on time of recording, not periodically (and hence not predictable)	Mismatch of objects in consecutive images
496	Object	Close	Reflectance	Objects seen through a reflection might appear nearer than they are	See Meaning	Misinterpretation of scene
497	Object	Remote	Reflectance	Objects seen through a reflection might appear to be farer away than they are	See Meaning	See Close
498	Object	Before	Reflectance	Analogue to Size	See Size	See Size
499	Object	After	Reflectance	Analogue to Size	See Size	See Size
500	Object	No (not none)	Transparency	Obj. is not transparent	Opaque object	Part of scene invisible if object should be transparent - wrong scene interpretation
501	Object	No (not none)	Transparency	Obj. is not transparent		Casts a shadow - therefore the scene is not illuminated as expected
502	Object	More (more of, higher)	Transparency	Obj. is highly transparent	Transparent object	Object not recognized

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
503	Object	More (more of, higher)	Transparency	Obj. is more transparent than expected		Objects behind it not correctly recognized due to distortions, e.g. through glass
504	Object	More (more of, higher)	Transparency	Obj. is more transparent than expected		Objects within it not correctly recognized due to distortions, e.g. through glass
505	Object	Less (less of, lower)	Transparency	Obj. is less transparent than expected	Objects behind it are less visible than expected	Objects behind it not correctly recognized due to reduced transp.
506	Object	Less (less of, lower)	Transparency	Obj. is less transparent than expected		Casts a shadow see No
507	Object	As well as	Transparency	Obj. is both more and less transp. than expected	Obj. consists of parts with high and low transparency	Object is recognized as several objects
508	Object	As well as	Transparency	Obj. is both more and less transp. than expected		Object seen through it is recognized as several objects
509	Object	As well as	Transparency	Obj. is both more and less transp. than expected		Object itself and objects behind it are merged
510	Object	Part of	Transparency	Parts of the object are transparent	See As well as	See As well as
511	Object	Reverse	Transparency	Object transparency is opposite to what is expected	Extreme case of Other than	See Other than
512	Object	Other than	Transparency	Obj. has another transp. than expected	See More, Less, As well as	See More, Less, As well as
513	Object	Spatial periodic	Transparency	Transp. of Obj. is spatially periodic	Relative positioning of Obj. and Observer is relevant (for what is seen through)	Wrong objects behind transp. Obj.
514	Object	Spatial aperiodic	Transparency	Transp. of Obj. is spatially aperiodic	See Spatial periodic	See Spatial periodic
515	Object	Temporal periodic	Transparency	Transp. changes periodically	Transp. depends on time of recording, but periodically (and hence predictable)	Temporarily periodic "Transp." errors as listed above
516	Object	Temporal periodic	Transparency	Transp. changes periodically		Mismatch of objects in consecutive images
517	Object	Temporal aperiodic	Transparency	Transp. changes aperiodically	Transp. depends on time of recording, not periodically (and hence not predictable)	Temporarily periodic "Transp." errors as listed above
518	Object	Temporal aperiodic	Transparency	Transp. changes aperiodically		Mismatch of objects in consecutive images

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
519	Object	Close	Transparency	Visible object transparency is increased for closer objects	See Meaning	Object not recognized
520	Object	Remote	Transparency	Visible object transparency is reduced for more distant objects	See Meaning	Objects behind not correctly recognized
521	Object	Before	Transparency	Analogue to Size	See Size	See Size
522	Object	After	Transparency	Analogue to Size	See Size	See Size
523	Object	In front of	Transparency	Objects in front of a transparent object are visible together with the other object,	See Meaning	Objects are confused
524	Object	Faster	Transparency	Transp. changes faster than expected	See Other than	See Other than
525	Object	Slower	Transparency	Transp. changes slower than expected	See Other than	See Other than
526	Object	No (not none)	Wave properties	Received light is not polarized	No respective visual effects caused by Obj.	CV alg. based on polarization effects are hampered
527	Object	More (more of, higher)	Wave properties	Received light is more polarized than expected	Reflected light is polarized - rainbow colours appear	Polarization colours confuse CV alg.
528	Object	Less (less of, lower)	Wave properties	Received light is less polarized than expected	Too few respective visual effects caused by Obj.	CV alg. based on polarization effects won't work
529	Object	As well as	Wave properties	Received light is both more and less polarized than expected (by different object parts)	See More and Less	Mixture of More and Less effects, depending on orientation
530	Object	Reverse	Wave properties	Effects on received light is inverse to expected	See Other than	See Other than
531	Object	Other than	Wave properties	Effects on received light is different from expected	Unexpected object appearance	Object not (correctly) recognized
532	Object	Spatial periodic	Wave properties	Polarization changes periodically with location along object	E.g. polarization plane depends periodically from location, generating positioning and orientation dependent optical effects on object surface	CV alg. confused by resulting periodic virtual texture
533	Object	Spatial aperiodic	Wave properties	Polarization changes aperiodically with location along	See Spatial periodic	See Spatial periodic

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
				object		
534	Object	Temporal periodic	Wave properties	Wave properties of reflected/ transferred light are periodically modified.	E.g. linear polarization changes regularly over time	Object appearance can be periodically modified in a way the observer is not able to cope with
535	Object	Temporal aperiodic	Wave properties	Wave properties of reflected/ transferred light are irregularly modified.	E.g. linear polarization plane rotates irregularly over time	Object appearance can be modified in a way the observer is not able to cope with
536	Objects	No (not none)	Number	No objects	Scene with no objects (only light sources and media)	False positives: non-existing objects erroneously reported by CV alg.
537	Objects	No (not none)	Number	Number of objects is not detectable/ decidable	Scene with "unknown" number of objects	False negatives: CV alg. misses detection of some objects
538	Objects	More (more of, higher)	Number	More objs. than expected		False positives: non-existent objects reported
539	Objects	More (more of, higher)	Number	More objs. than expected	Scene is more complex than expected	False negatives: objects are missed
540	Objects	More (more of, higher)	Number	More objs. than expected	Occlusions between objects are more likely than expected	"Misinterpretation of number of objects within scene
541	Objects	More (more of, higher)	Number	More objs. than expected		Partial occluded objects remain completely undetected
542	Objects	More (more of, higher)	Number	More objs. than expected		An object is covered such that uncovered parts are interpreted as belonging to different objects
543	Objects	More (more of, higher)	Number	More objs. than expected		Parts of different objects are interpreted as some other, non-existent object
544	Objects	Less (less of, lower)	Number	Less objs. than expected	Scene is simpler than expected	(Parts of) background interpreted as (foreground) object(s)
545	Objects	Less (less of, lower)	Number	Less objs. than expected	Less activity within the scene than expected (than usual)	False positives: objects erroneously reported by CV alg.
546	Objects	Less (less of, lower)	Number	Less objs. than expected	Scene is emptier than expected (than usual)	
547	Objects	As well as	Number	Both more objs. (of kind X) and	Scene is different from expected	Objects of kind X are reported as of kind Y

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
				less objs. (of kind Y) than expected		(or vice versa)
548	Objects	As well as	Number	Both more objs. (of kind X) and less objs. (of kind Y) than expected		Objects of kind X or Y are reported as of some other kind Z
549	Objects	As well as	Number	Both more objs. (of kind X) and less objs. (of kind Y) than expected		False negatives: objects are missed
550	Objects	As well as	Number	Both more and less objs. than expected	Unusual (unexpected) distribution of objects: in some areas of the scene unusual many, in other parts unusual few	See More and Less
551	Objects	Part of	Number	One object is split into multiple objects because parts of the object are covered by a different object or are outside of the view	See Part of Occl.	See Part of Occl.
552	Objects	Other than	Number	Other objs.than expected	Unusual (unexpected) objects within the scene	False positives: objects are misinterpreted
553	Objects	Other than	Number	See More and Less	See More and Less	See More and Less
554	Objects	Other than	Number	See More and Less		
555	Objects	Spatial periodic	Number	Object arrangement is periodical	Observer resolution and windowing have to be appropriate to capture a characteristic arrangement	If resolution of field of view are not appropriate detection based on characteristic arrangements is corrupted
556	Objects	Temporal periodic	Number	Number of objects varies Temporal periodically	Number of obj. in scene depends on time of recording, but periodically (and hence predictable)	Mismatch of objects in consecutive images
557	Objects	Temporal periodic	Number	Number of objects varies Temporal periodically	If the frequency exceeds the frame rate (faster) temporal aliasing occurs	Aliasing frequency is interpreted instead of actual one
558	Objects	Temporal aperiodic	Number	Number of objects varies temporal aperiodically	Number of Obj. in scene depends on time of recording, not periodically (and hence not predictable)	Mismatch of objects in consecutive images

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
559	Objects	Close	Number	A number of objs. is closer to observer than expected	See Obj. Pos.	See Obj. Pos.
560	Objects	Remote	Number	A number of objs. is more remote from observer than expected	See Obj. Pos.	See Obj. Pos.
561	Objects	In front of	Number	A number of obj. is in front of each other (in respect to the observer)	They cover each other	They are indistinguishable
562	Objects	Behind	Number	See In front of	See In front of	See In front of
563	Objects	Faster	Number	The num. of obj. changes faster than expected	The number of objects in scene depends significantly on time of exposure	Scene phase misinterpreted
564	Objects	Faster	Number	The num. of obj. changes faster than expected	Aliasing see Temporal periodic	
565	Objects	No (not none)	Positions	No difference in Position hence multiple objects share the same position	One object completely hides another	Algorithm misses detection of hidden object
566	Objects	No (not none)	Positions	No difference in Position hence multiple objects share the same position	Two objects are intertwined but share the same center point	Algorithm sees multiple objects as one
567	Objects	No (not none)	Positions	No Positions of Objects relative to each other known	It is not possible to decide how an object is positioned relative to another	Objects order in distance from Observer is confused
568	Objects	No (not none)	Positions	No Positions of Objects relative to each other known		Lateral relationship of objects is misinterpreted
569	Objects	More (more of, higher)	Positions	More different positions than expected	See Num	See Num
570	Objects	More (more of, higher)	Positions	More discrete relative Pos.s of Obj.s than expected	Object positions are quantized at a greater resolution than expected	CV alg. expects discrete positions but gets positions in between ? confused
571	Objects	More (more of, higher)	Positions	More discrete relative Pos.s of Obj.s than expected		
572	Objects	More (more of, higher)	Positions	One or more extends of relative position is bigger than expected	An arrangement of objects is "stretched"	CV alg. based on assigning a group of objects to one entity is less likely to find the compound
573	Objects	Less (less of, lower)	Positions	Relative Pos.s of objects known Less (precisely)	It is difficult to decide how an object is positioned	Some ordering of objects in distance is confused

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
				than expected	relative to another	
574	Objects	Less (less of, lower)	Positions	Relative Pos.s of objects known Less (precisely) than expected		Some lateral relationships of objects are misinterpreted
575	Objects	Less (less of, lower)	Positions	Less different positions than expected	See Num	See Num
576	Objects	Less (less of, lower)	Positions	One or more extends of position are smaller than expected	An arrangement of objects is "shrunken"	The CV alg. is less likely to distinguish the two objects than to identify them as a one
577	Objects	As well as	Positions	One extend of pos is smaller another is bigger than expected	See More, Less	See More, Less
578	Objects	Part of	Positions	Multiple objects are partially overlapping	See No	See No
579	Objects	Part of	Positions	Only part of relative obj. Pos. known	Information about object parts is missing	Scene misinterpreted, because position of whole objects misleads CV alg.
580	Objects	Reverse	Positions	Two objects have swapped positions (from the expected)	Swapped positions create different scene than expected	CV alg. confuses multiple objects because it expects each object at a specific position or relative position
581	Objects	Other than	Positions	Relative pos. of obj. is Other than expected	Unexpected scene	Scene is completely misinterpreted
582	Objects	Other than	Positions	Relative pos. of obj. is Other than expected		Parts of scene are misinterpreted
583	Objects	Other than	Positions	Relative pos. of obj. is Other than expected		An object or some objects not correctly recognized or not recognized at all
584	Objects	Spatial periodic	Positions	Objects are located regularly (same kind)	Same kind of objects appear in a geometrically regular pattern	Individual objects are confused
585	Objects	Spatial periodic	Positions	Objects are located regularly (same kind)		Stereo CV alg. mismatches objects/points Þ distances of objects reported incorrectly
586	Objects	Spatial periodic	Positions	Objects are located regularly (different kind)	Different kind of objects appear in a geometrically regular pattern	Only regularity detected, but not the individual objects
587	Objects	Spatial aperiodic	Positions	Objects are placed in an chaotic unordered fashion	No relative positions can be expected	CV alg. Cannot use apriori knowledge of positional relations

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
						(except of maybe statistical knowledge)
588	Objects	Spatial aperiodic	Positions	Objects are placed in an chaotic unordered fashion		CV alg. expects special positional relations and is confused if the relation is not happening
589	Objects	Temporal periodic	Positions	Objects relative pos. changes periodically	Objects relative pos. depends on time of observation (exposure), but reappears periodically and hence predictably	"Unsynchronized" CV alg. misinterprets scene "phase"
590	Objects	Temporal periodic	Positions	Objects relative pos. changes periodically		Also aliasing (misinterpretation of frequency) can occur if the period is too short
591	Objects	Temporal periodic	Positions	Objects relative pos. changes periodically		Confusion of objects or their positioning
592	Objects	Temporal aperiodic	Positions	Objects movement schedule diverges from expected periodic movement, hence being aperiodic	There is an expected movement schedule from which the system diverges	CV alg. expects special movement schedule and is confused if the schedule is not met
593	Objects	Temporal aperiodic	Positions	Objects move in an chaotic unordered fashion	No movement schedule can be created	CV alg. cannot use apriori knowledge of movements
594	Objects	Close	Positions	Multiple objects closer together than expected	Visible connection between multiple objects is strengthened	CV alg. might interpret the multiple objects as something different (e.g. a single different object)
595	Objects	Close	Positions	Multiple objects closer together than expected	Multiple objects directly contact each other	(See Less Pos)
596	Objects	Close	Positions	Multiple objects closer together than expected	(also see Less Pos)	
597	Objects	Remote	Positions	Multiple objects are further apart from each other than expected (also see More Pos)	Visible connection between multiple objects is weakened	CV alg. might miss essential relationship between multiple objects because they are too far apart
598	Objects	Remote	Positions	Multiple objects are further apart from each other than expected (also see More Pos)	(also see More Pos)	

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
599	Objects	Before	Positions	One object is moving earlier than the others	Nn/a	Nn/a
600	Objects	After	Positions	One object is moving later than the others	Nn/a	Nn/a
601	Objects	In front of	Positions	Object is in front of another	Object covers (partially) another object ? depending on its transparency, the object behind is more or less visible	See Occlusion and Transparency
602	Objects	In front of	Positions	Object is in front of another		
603	Objects	In front of	Positions	Object is in front of another		
604	Objects	Faster	Positions	The whole scene acts/moves faster than expected	See Observer Exposure and Quantization	See Observer Exposure and Quantization
605	Objects	Slower	Positions	The whole scene acts/moves slower than expected	See Observer Exposure and Quantization	See Observer Exposure and Quantization
606	Objects	No (not none)	Occlusion	Objects are not occluding each other	All objects are completely visible	CV alg. is confused by clutter in scene
607	Objects	No (not none)	Occlusion	Objects are not occluding each other		Too many objects visible for correct and timely processing by CV alg.
608	Objects	More (more of, higher)	Occlusion	More objects occlude each other than expected	Less details of objects are visible	Detection quality is decreased by less information of needed Objects
609	Objects	More (more of, higher)	Occlusion	More objects occlude each other than expected	Some objects are occluded to a degree which makes their detection difficult	
610	Objects	More (more of, higher)	Occlusion	More visible area of an object is occluded by others than expected	Less details of object are visible	Detection quality is decreased by less information of needed Object
611	Objects	Less (less of, lower)	Occlusion	Less objects occlude each other than expected	More details of objects are visible	Detection quality is decreased by too much clutter in the scene
612	Objects	Less (less of, lower)	Occlusion	Less objects occlude each other than expected		See No
613	Objects	Less (less of, lower)	Occlusion	Less visible area of an object is occluded by others than	More details of object are visible	Detection quality is decreased by too much clutter in the scene

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
				expected		
614	Objects	Less (less of, lower)	Occlusion	Less visible area of an object is occluded by others than expected		See No
615	Objects	As well as	Occlusion	Occluded objects further occlude other objects	Multiple levels of occlusion means most occlusions will remain even if observer moves to a different position	Object separation severely hampered
616	Objects	As well as	Occlusion	Combination of More and Less	See More and Less	See More and Less
617	Objects	Part of	Occlusion	Object is partially occluded	Remaining visible parts have a different appearance than the whole object	Confusion of partial image with another object can create malfunctions
618	Objects	Reverse	Occlusion	Occlusion is reverted	Object B occludes object A instead A occludes B as usual	Objects are confused (B taken for A)
619	Objects	Other than	Occlusion	See Where else	Parts of an object which are usually occluded are visible, while others are occluded, which are usually visible	Object is not recognized
620	Objects	Other than	Occlusion	See Where else		Object is confused with another
621	Objects	Other than	Occlusion	See Where else		CV alg. Needs special parts of an object to be covered, a lack of important parts hampers detection
622	Objects	Where else	Occlusion	Different parts of an object are occluded than expected	Ordered occlusion creates a pattern	CV alg. confuses occlusion pattern with object
623	Objects	Where else	Occlusion	Different parts of an object are occluded than expected		
624	Objects	Where else	Occlusion	Different parts of an object are occluded than expected		
625	Objects	Where else	Occlusion	Different parts of an object are occluded than expected		
626	Objects	Spatial aperiodic	Occlusion	Occl. creates a chaotic / unordered pattern	Occlusions are chaotic	CV alg. is not handling occlusions correctly
627	Objects	Spatial aperiodic	Occlusion	Occl. creates a chaotic /		Scene analysis takes longer than allowed

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
				unordered pattern		
628	Objects	Temporal periodic	Occlusion	Occl. follow a time schedule	See Observer Exposure and Quantization	See Observer Exposure and Quantization
629	Objects	Temporal periodic	Occlusion	Occl. follow a time schedule	Occlusions can be filtered/reduced by time	CV alg. expects occlusions to follow a time schedule but this schedule is not adhered to
630	Objects	Temporal aperiodic	Occlusion	Occl. follow no special time schedule	Occl. cannot be filtered by time	CV alg. cannot filter Occl. by time
631	Objects	Close	Occlusion	Object which occludes another is closer (to Observer) than expected	Remote object is completely hidden by the closer object	Remote object is invisible
632	Objects	Close	Occlusion	Object which occludes another is closer (to Observer) than expected		
633	Objects	Close	Occlusion	Object which occludes another is closer (to Observer) than expected		
634	Objects	Close	Occlusion	Object which occludes another is closer (to Observer) than expected		
635	Objects	Close	Occlusion	Object which occludes another is closer (to Observer) than expected		
636	Objects	Remote	Occlusion	Object which occludes another is more Remote (from Observer) than expected	Nearer object covers only some "inner part of remote object ? complete silhouette of remote is visible	Closer object is considered as part of remote object
637	Objects	Before	Occlusion	Occl. appear earlier than expected	See Temp. periodic	See Temp. periodic
638	Objects	After	Occlusion	Occl. appear later than expected	See Temp. periodic	See Temp. periodic
639	Objects	Faster	Occlusion	Occl. changes faster than expected	Mixture of effects from Pos. and other of Occl.	Mixture of effects from Pos. and other of Occl.
640	Objects	Slower	Occlusion	Occl. change slower than expected	Mixture of effects from Pos. and other of Occl.	Mixture of effects from Pos. and other of Occl.
641	Objects	No (not none)	Shadowing	No shadowing in the scene	No cast shadows visible. Possible reasons:	Objects not, or wrongly recognized, because their

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
						roughness, hills or dips on their surface is not detected
642	Objects	No (not none)	Shadowing	Object is not shadowing the scene	- only diffuse light	Relationships among objects incorrectly interpreted
643	Objects	No (not none)	Shadowing	Object is not shadowing the scene	- Many l.s. in/ around scene	Completely occluded object remains undetected (no cast shadow from it visible)
644	Objects	No (not none)	Shadowing	Object is not shadowing the scene	- (strong) l.s. very close to observer (e.g. ring light)	CV alg. Dependent on shadows Miscalculates the object's position
645	Objects	No (not none)	Shadowing	Object is not shadowing the scene	(small (minimal) contrast	
646	Objects	No (not none)	Shadowing	Object is not shadowing the scene	Without shadow the object position is more difficult to derive	
647	Objects	No (not none)	Shadowing	Object shadow is hidden by other object or lies outside of FOV	Without shadow the object position is more difficult to derive	CV alg. Miscalculates the object's position
648	Objects	More (more of, higher)	Shadowing	Object has bigger/ darker shadow than expected	Shadow may "occlude" more in the scene than expected	See More Occl.
649	Objects	More (more of, higher)	Shadowing	Object has bigger/ darker shadow than expected	See More Occl.	
650	Objects	More (more of, higher)	Shadowing	Object is within bigger/darker shadow than expected	See More Occl.	See More Occl.
651	Objects	More (more of, higher)	Shadowing	More shadowing than expected	Large parts of scene in shadow	Underexposure: objects in shadow not detected
652	Objects	Less (less of, lower)	Shadowing	Object has smaller/lighter shadow than expected	Shadow may "occlude" less in the scene than expected	See Less Occl.
653	Objects	Less (less of, lower)	Shadowing	Object has smaller/lighter shadow than expected	See Less Occl.	
654	Objects	Less (less of, lower)	Shadowing	Object is within smaller/lighter shadow than expected	See Less Occl.	See Less Occl.
655	Objects	Less (less of, lower)	Shadowing	Less shadowing than expected	More parts of scene in light than usual	Overexposure: similar to No
656	Objects	Less	Shadowing	Less shadowing	More parts of the	Too long computing

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
		(less of, lower)		than expected	scene contain visible information that must be processed	time for image processing needed
657	Objects	As well as	Shadowing	Several objects cast shadows onto the same object	Combination and thus more complex shadows are possible	See More Shad.
658	Objects	As well as	Shadowing	Several objects cast shadows onto the same object	See More Shad.	
659	Objects	As well as	Shadowing	Both more and less Shadowing than expected	Combination of More and Less	Combination of More and Less in different image regions
660	Objects	Part of	Shadowing	Partial shadow is visible on Object	See Occl.	See Occl.
661	Objects	Reverse	Shadowing	Shading object and shadowed object exchange roles (not their position, e.g. by changing pos. of l.s.)	See Where else	See Where else
662	Objects	Reverse	Shadowing	Shadowing of objects is reversed	Parts usually shadowed are not shadowed and vice versa	CV alg. confused - misinterpretation of scene
663	Objects	Reverse	Shadowing	Shadows are reversed	All shadows point in opposite direction than usual	CV alg. confused - misinterpretation of scene
664	Objects	Reverse	Shadowing	Shadows are reversed		
665	Objects	Where else	Shadowing	Different parts than expected of an object are shadowed	See More, Less, As well as	CV alg. Is confused by unexpected shading -> misdetections
666	Objects	Where else	Shadowing	Reflecting obj. is within shadow	Reflecting object is less recognizable than if illuminated ? reflected objects become more prominent, but distortion effects through reflecting obj. remain	Reflecting objects in shadow remain undetected
667	Objects	Where else	Shadowing	Reflecting obj. is within shadow		Reflected objects are interpreted as real, but aliasing effects distort reflected images ? hampered recognition
668	Objects	Where else	Shadowing	Transp. obj. is shad.	Transparent object is less recognizable than if illuminated ? objects behind it	Objects in shadow remain undetected

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
					become more prominent, but aliasing effects through transp. remain	
669	Objects	Where else	Shadowing	Transp. obj. is shad.		Aliasing effects distort seen through objects ? hampered recognition
670	Objects	Where else	Shadowing	Refl. obj. is outside of scene	Shadows cast into the scene from aside	Hampered object recognition
671	Objects	Spatial periodic	Shadowing	Spatial periodic shadows, there is some order/rule as to what parts of an object are shaded	Regular shadows creates a pattern	CV alg. confuses shadow pattern with object
672	Objects	Spatial periodic	Shadowing	Spatial periodic shadows, there is some order/rule as to what parts of an object are shaded	See Where else	CV alg. confuses shadow pattern with texture
673	Objects	Spatial aperiodic	Shadowing	Spatial aperiodic shadows - Shad. creates a chaotic / unordered pattern	Shadows are chaotic	CV alg. confused by irregular shadows -> misdetections (shadows taken for textures)
674	Objects	Temporal periodic	Shadowing	Shad. follows a time schedule	According Pos.	According Pos.
675	Objects	Temporal periodic	Shadowing	Shad. follows a time schedule	See Observer Exposure and Quantization	See Observer Exposure and Quantization
676	Objects	Temporal aperiodic	Shadowing	Shad. follows no special time schedule	Shad. cannot be filtered by time / exploiting scene phase	CV alg. cannot filter Shad. by exploiting scene phase
677	Objects	Close	Shadowing	Shadow is closer than expected	See More	See More
678	Objects	Close	Shadowing	Object which shades another is closer to it than expected	Depending on relative size of l.s., shadowed object is either more (e.g.) completely or less in shadow	See More and Less
679	Objects	Close	Shadowing	Object which shades another is closer to l.s. than expected	See More and Less	See More and Less
680	Objects	Remote	Shadowing	Shadow is more remote than expected	See Less	See Less
681	Objects	Before	Shadowing	Shad. appears earlier than expected	See Temporal aperiodic	See Temporal aperiodic
682	Objects	After	Shadowing	Shad. appears	See Temporal	See Temporal

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
				later than expected	aperiodic	aperiodic
683	Objects	Faster	Shadowing	Shad. (Obj.) moves faster than expected	Shadows move "faster than exposure"	Motion blur of shadows - shadows diffused - hampered scene recognition
684	Objects	Slower	Shadowing	Shad. (Obj.) moves slower than expected	Shadows move "slower than exposure"	Shadows sharper than expected - hampered scene recognition
685	Objects	Slower	Shadowing	Shad. (Obj.) moves slower than expected		Shadows move so slowly that they are taken for texture
686	Objects	No (not none)	Reflectance	There are no reflections between objects	Hidden objects cannot be seen	Hidden objects remain undetected
687	Objects	More (more of, higher)	Reflectance	There are more reflections between objects than expected	Creates multiple views within the scene	CV alg. might confuse reflectance with reality and infer wrong position/ relation data
688	Objects	More (more of, higher)	Reflectance	There are more reflections between objects than expected	Can create multiple visible instances of the same object	CV alg. detects more objects than there are in the scene
689	Objects	Less (less of, lower)	Reflectance	There are less reflections between objects than expected	"Reflection can be used to see different views in one image	if the expected reflection is hampered, this reduces the quality/ visibility of this different view"
690	Objects	Less (less of, lower)	Reflectance	There are less reflections between objects than expected		The scene can be not sufficiently illuminated, due to only dark non reflecting objects
691	Objects	As well as	Reflectance	Both More and Less Refl. Obj. in scene than expected - in different scene areas	Strongly diversified complexity in different scene areas	See More and less/ No
692	Objects	Part of	Reflectance	A reflection of an object is partially visible	See Occl.	See Occl.
693	Objects	Part of	Reflectance	A reflection on an object is partially visible	A highlight in an object is partially covered by another	Overblending - partial hampering of correct situation recognition
694	Objects	Reverse	Reflectance	Observer sees itself in a reflection instead of expected object	Own body/ observer itself visible as an object	CV alg. confuses observer/its own body with other objects
695	Objects	Reverse	Reflectance	Refl. are reversed	Object reflections appear reversed to expected, e.g. upside down, or	CV alg. confused

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
					laterally inverted	
696	Objects	Other than	Reflectance	Reflections are different than expected	Reflections occur where none should and vice versa	See No/Less/More
697	Objects	Where else	Reflectance	Refl. Obj. is Shad.	See Shad.	See Shad.
698	Objects	Where else	Reflectance	Refl. Obj. is Transp.	On Obj.s. surface, reflected and seen through objects merge	Misinterpretation of reflecting object and its associated images
699	Objects	Spatial periodic	Reflectance	Refl. creates an ordered pattern, there is some order/rule as to what parts of an object are visible through reflections	Ordered reflectance creates a pattern	CV alg. confuses reflectance pattern with object or textures
700	Objects	Spatial periodic	Reflectance	Refl. creates an ordered pattern, there is some order/rule as to what parts of an object are visible through reflections	See Where else	
701	Objects	Spatial aperiodic	Reflectance	Refl. creates a chaotic / unordered pattern	Refl. is chaotic/ irregular	CV alg. confused by irregular reflectance -> misdetections
702	Objects	Temporal periodic	Reflectance	Refl. follows a time schedule	See Observer Exposure and Quantization	See Observer Exposure and Quantization
703	Objects	Temporal aperiodic	Reflectance	Refl. follows no special time schedule	Refl. cannot be filtered by time / exploiting scene phase	CV alg. cannot filter Refl. by exploiting scene phase
704	Objects	Close	Reflectance	Refl. is closer than expected	See More	See More
705	Objects	Close	Reflectance	Refl. Obj. is closer to reflected object than expected	Real and reflected object may appear as (symmetrical) pair	False positive: object actually interpreted as (symmetrical) pair
706	Objects	Close	Reflectance	Refl. Obj. is closer to Observer than expected	Reflections are larger and/or brighter than expected	False positive: mirrored scene taken for real
707	Objects	Close	Reflectance	Refl. Obj. is closer to Observer than expected		Overexposure: reflection too bright
708	Objects	Remote	Reflectance	Refl. is more remote than expected	See Less	See Less
709	Objects	Remote	Reflectance	Refl. Obj. is more remote from reflected object than expected	Association between real obj. and mirror image lost	False positive. mirror image reported as real object
710	Objects	Remote	Reflectance	Refl. Obj. is more	Reflections are not	No mirror effect can

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
				remote from Observer than expected	recognizable any more	be exploited (hidden objects cannot be detected through reflections anymore)
711	Objects	Before	Reflectance	Refl. changes earlier than expected	Refl. cannot be filtered by time / exploiting scene phase (There exists a temporal schedule that ensures that the l.s. and the objects are positioned to each other in such a way that the amount of reflections is minimized at the exposure timeframe.)	CV alg. cannot filter Refl. by exploiting scene phase
712	Objects	Before	Reflectance	Refl. changes earlier than expected		
713	Objects	After	Reflectance	Refl. changes later than expected	Refl. cannot be filtered by time / exploiting scene phase	CV alg. cannot filter Refl. by exploiting scene phase
714	Objects	After	Reflectance	After reaching a certain age obj. are losing reflection property	See Less Reflection	CV alg. could miss a second point of view and thus needed additional information about objects
715	Objects	In front of	Reflectance	Refl. occurs directly in front of observer	(Almost) no means given to distinguish reflection from reflect object(s)	Reflection is confused with original object(s)
716	Objects	In front of	Reflectance	Reflecting obj. in front of expected object	Expected reflections not detectable by Observer - as long as reflecting Obj. is opaque	No mirror effect can be exploited
717	Objects	In front of	Reflectance	Reflecting obj. in front of expected object		Also see Where else Shad.
718	Objects	In front of	Reflectance	Refl. obj. in front of observer	See Close	See Close
719	Objects	Behind	Reflectance	Refl. obj. behind observer	If also a reflecting object in front of observer, infinite reflections can occur	CV alg. confused
720	Objects	Faster	Reflectance	Refl. changes faster than expected	Refl. change during exposure	Reflections are smeared out / blurred
721	Objects	Slower	Reflectance	Refl. changes slower than expected	Refl. stay at one pos. longer than expected	Overexposures of reflections

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
722	Objects	No (not none)	Transparency	All objects are opaque	Objects which are occluded by other objects, are hidden from Observer's view, as long as shadows extruding behind occluding objects don't reveal them	Occluded objects not detected
723	Objects	No (not none)	Transparency	All objects are opaque		Casted shadows misinterpreted as objects or textures on visible objects or background
724	Objects	More (more of, higher)	Transparency	The objects are more transparent than expected	More objects are visible than usual	CV alg. is confused by clutter in scene
725	Objects	More (more of, higher)	Transparency	The objects are more transparent than expected	More "looking through" effects than usual	Scene analysis takes too much time
726	Objects	Less (less of, lower)	Transparency	The objects are less transparent than expected	Objects can be occluded or the bad visibility of objects through another object can reduce the visible contrast of these objects	Decreased visible image quality can reduce the quality of detection of an CV alg.
727	Objects	As well as	Transparency	Different object transparencies are combined	Multiple layers of transparency create a reduced/ combined transparency	See Less
728	Objects	As well as	Transparency	Different object transparencies in different scene areas	Strongly diversified complexity in different scene areas	See More and less/ No
729	Objects	Part of	Transparency	Parts of an object are transparent and alow a part of another object to be seen	Complex mixture of multiple objects visible through projection although the objects are not intertwined	Misdetection of objects as appearances are changed
730	Objects	Part of	Transparency	Transp. obj. in unusual part of scene	Scene looks different from usual	CV alg. confused
731	Objects	Other than	Transparency	Other parts of an object than expected are shown through transparency	Different object parts visible	Misdetection of objects as appearances are changed
732	Objects	Where else	Transparency	Different parts of an object show other objects through Transp. than expected	Different object parts visible	Misdetection of objects as appearances are changed
733	Objects	Where else	Transparency	Transp. obj. is shad.	See Shad.	See Shad.
734	Objects	Where	Transparency	Transp. obj. is	See Refl.	See Refl.

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
		else		reflecting		
735	Objects	Spatial periodic	Transparency	Transp. creates an ordered pattern, there is some order/rule which parts of an object are visible through other objects	Regular transparencies in scene	CV alg. confuses transparency pattern with object
736	Objects	Spatial periodic	Transparency	Transp. creates an ordered pattern, there is some order/rule which parts of an object are visible through other objects	Ordered trans. creates a pattern	
737	Objects	Spatial periodic	Transparency	Transp. creates an ordered pattern, there is some order/rule which parts of an object are visible through other objects	Different object parts visible	
738	Objects	Spatial aperiodic	Transparency	Transp. creates a chaotic / unordered pattern	Transp. is chaotic	CV alg. confused by irregular transparency -> misdetections
739	Objects	Temporal periodic	Transparency	Transp. follows a time schedule	According Refl.	See Refl.
740	Objects	Temporal aperiodic	Transparency	Transp. follows no special time schedule	According Refl.	See Refl.
741	Objects	Close	Transparency	Transp. is closer to seen-through object than expected	Separation between transp.obj. and those behind is aggravated	Objects not correctly distinguished
742	Objects	Close	Transparency	Transp. obj. is closer to observer than expected	Silhouette of transparent obj. only partially visible, or not at all	Transp. obj. confused with medium
743	Objects	Close	Transparency	Transp. obj. is closer to observer than expected		Optical distortions of seen-through obj. not correctly interpreted
744	Objects	Remote	Transparency	Transp. obj. is more remote from seen-through object(s) than expected	See Less	See Less
745	Objects	Remote	Transparency	Transp. obj. is more remote from Observer than expected	Transparent object smears with background	Transp. obj. too far away or too faint for being detected
746	Objects	Before	Transparency	Transp. appears earlier than expected	According Refl.	See Refl.
747	Objects	After	Transparency	Transp. appears later than	According Refl.	See Refl.

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
				expected		
748	Objects	In front of	Transparency	Transp. obj. in front of another Transp. obj.	Transparency effects accumulate	Objects not correctly separated
749	Objects	In front of	Transparency	Transp. obj. in front of another Transp. obj.		CV alg. confused
750	Objects	Behind	Transparency	Transp. obj. behind another Transp. obj.	See In front of	See In front of
751	Objects	Faster	Transparency	Tranp. appear faster than expected	According Refl.	According Refl.
752	Objects	Slower	Transparency	Transp. appear slower than expected	According Refl.	According Refl.
753	Objects	No (not none)	Wave	No interference between objects	No respective optical effects caused by objects	Systems depending on coherent or polarized light fail
754	Objects	More (more of, higher)	Wave	More interferences between objects than expected	Accumulation of optical effects such as halos, rainbows, auras etc.	CV alg. confused - misinterpretation of visual effects
755	Objects	Less (less of, lower)	Wave	Less interferences between objects than expected	No optical effects where they are expected	Wrong scene interpretation
756	Objects	As well as	Wave	Both more and less interferences between objects than expected (in different scene areas)	Highly complex scene - see More and Less	Mixture of More and Less effects, depending on relative positioning of objects
757	Objects	Part of	Wave	Only part of expected optical effects	Interpretation of scene is complicated	Hampered or wrong scene interpretation
758	Objects	Spatial periodic	Wave	Spatial periodic variation of Wave effects (of some objects)	Interferences occur regularly in scene	Confusion of objects causing interference effects
759	Objects	Spatial periodic	Wave	Spatial periodic variation of Wave effects (of some objects)		Interferences are interpreted as objects or textures
760	Objects	Spatial aperiodic	Wave	Spatial aperiodic variation of Wave effects (of some objects	See Spatial periodic	See Spatial periodic
761	Objects	Temporal periodic	Wave	Temporal periodic change of optical interferences between several objects	Scene appearance depends on exposure time, but repeatable and hence learnable	Misinterpretation of scene "phase"
762	Objects	Temporal aperiodic	Wave	Temporal aperiodic change of optical interferences between several	Scene appearance depends on exposure time, not precisely repeatable	Misinterpretation of scene "phase"

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
				objects		
763	Objects	Close	Wave	Interferencing objects are close to each other (closer than expected)	In general, optical effects are reduced,	Optical effects used to calculate object positions - interferometry - is hampered
764	Objects	Close	Wave	Interferencing objects are close to each other (closer than expected)	But small distance changes can influence appearance of optical effects more significantly	
765	Objects	Remote	Wave	Interferencing objects are far away from each other (more than expected)	Optical effects can be aggravated,	Scene not correctly recognized
766	Objects	Remote	Wave	Interferencing objects are far away from each other (more than expected)	But less sensible to small distance changes	Distance between object imprecisely measured
767	Objects	In front of	Wave	Interferencing obj. In front of another	Complex composition of optical effects	Scene not correctly recognized
768	Objects	In front of	Wave	Interferencing obj. In front of another		Complex optical effects interpreted as texture or own objects
769	Objects	Behind	Wave	Interferencing obj. Behind another	See In front of	See In front of
770	Objects	Faster	Wave	Interferences change faster than expected	Interferences change during exposure - smeared out	Hampered recognition of visual effects
771	Observer - Optomechanics	No (not none)	Number	No observers present	No observations available	Misinterpreted as unlit scene
772	Observer - Optomechanics	No (not none)	Number	No observers present		SUT cannot detect anything but does not realize that there is no observer
773	Observer - Optomechanics	No (not none)	Number	No observers present		SUT detects false objects (archived input or supplied by other components that are no visual observers "synesthesia")
774	Observer - Optomechanics	More (more of, higher)	Number	More observers present than expected	More observations are made	Calculation time exceeds available time
775	Observer - Optomechanics	More (more of, higher)	Number	More observers present than expected	Input data grows	Multiple observers are confused with each other, as less observers are expected
776	Observer -	More	Number	More observers		More resources are

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
	Optomechanics	(more of, higher)		present than expected		needed to process the increased amount of information, thus unnecessarily blocking them for other components
777	Observer - Optomechanics	Less (less of, lower)	Number	Insufficient observers present	Views on scene do not allow to capture the complexity of the scene	The imperfect input data leads to imperfect results. The imperfection can lead to no, unexpected, inaccurate or wrong output
778	Observer - Optomechanics	Less (less of, lower)	Number	Insufficient observers present		
779	Observer - Optomechanics	Less (less of, lower)	Number	System uses less observers than expected	There are less different observers present than expected	There is less diverse information available than needed to achieve the necessary goals/ quality
780	Observer - Optomechanics	As well as	Number	System uses the same observer in multiple ways	The same observer output is taken for different observers from different positions	See Less
781	Observer - Optomechanics	Part of	Number	Only a part of the expected observers are identifiable (can be located)	See Less	See Less
782	Observer - Optomechanics	Other than	Number	The number of Observers differs from the expected Num	See Part of More, Less	See Part of More, Less
783	Observer - Optomechanics	Where else	Number	Observers are located/oriented differently than expected	All data dependent on the expected position is inaccurate	Wrong, inaccurate, or indeterminable output
784	Observer - Optomechanics	Spatial periodic	Number	Several observers are placed in a regular grid/array	The spatial information in the scene (its detail) is not allowed to exceed a certain frequency otherwise its lost or aliasing can occur	Insufficiently detailed or wrong output
785	Observer - Optomechanics	Spatial periodic	Number	Several observers are placed in a regular grid/array		
786	Observer - Optomechanics	Spatial aperiodic	Number	Several observers are placed at different positions	See Spatial Periodic	See Spatial Periodic
787	Observer - Optomechanics	Temporal periodic	Number	See Temporal aperiodic	See Temporal aperiodic	See Temporal aperiodic

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
788	Observer - Optomechanics	Temporal aperiodic	Number	Over time the number of observers fluctuates chaotically	The total amount of available information about the scene fluctuates chaotically	The system's performance fluctuates chaotically
789	Observer - Optomechanics	Temporal aperiodic	Number	Number of "usable" observers varies aperiodically	Observer positions are determinable with periodically changing accuracy therefore previous positions can have variant confidence	If the variant confidence is not taken into account, inaccuracy will propagate over time
790	Observer - Optomechanics	Close	Number	All observers are close to each other (short baseline)	Short baseline makes triangulation results less accurate since the displacement of corresponding images pts. is smaller	Camera pose estimation fails or is inaccurate
791	Observer - Optomechanics	Close	Number	All observers are close to each other (short baseline)	The common FOV is limited to a certain direction	Reconstruction fails or is inaccurate
792	Observer - Optomechanics	Close	Number	All observers are close to each other (short baseline)	Reconstruction results will be accurate for this direction only	Observer direction dependent optical effects are misinterpreted as object-inherent (e.g. texture)
793	Observer - Optomechanics	Remote	Number	Observers are far from each other (wide baseline)	Hard to find correspondences between images from different positions -> Reconstruction results are more likely to fail	Relative camera positions might not be determinable
794	Observer - Optomechanics	Remote	Number	Observers are far from each other (wide baseline)		Relative object positions might not be determinable
795	Observer - Optomechanics	Before	Number	The number of observers is reduced before it was expected	See Less	See Less
796	Observer - Optomechanics	Before	Number	The number of observers is increased before it was expected	See More	See More
797	Observer - Optomechanics	After	Number	The minimum number of observes is reached after it was expected	See meaning	Any event that shall be registered within a 3D environment is lost until the minimum number of observers is reached
798	Observer - Optomechanics	Faster	Number	Over time the number of	See Before	See Before

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
				observers changes faster than expected		
799	Observer - Optomechanics	Slower	Number	Over time the number of observers changes slower than expected	See After	See After
800	Observer - Optomechanics	Slower	Number	Moving single observer (treated as multiple observers) is too slow in capturing a dynamic scene, which is assumed to be static	Artefacts are introduced in the observed image-data itself due to asynchronous capturing	Unpredictable results
801	Observer - Optomechanics	Slower	Number	Moving single observer (treated as multiple observers) is too slow in capturing a dynamic scene, which is assumed to be static		
802	Observer - Optomechanics	No (not none)	Field of View	No FOV at all	Extremely small section of scene visible	Nothing (correctly) detected
803	Observer - Optomechanics	More (more of, higher)	Field of View	Observer uses a bigger FOV than expected	Focal length smaller than expected	More distant entities not detected
804	Observer - Optomechanics	More (more of, higher)	Field of View	Observer uses a bigger FOV than expected	More of scene captured than expected	Objects interpreted as smaller than they are
805	Observer - Optomechanics	More (more of, higher)	Field of View	Observer uses a bigger FOV than expected	Objects size shrinks/grows with increasing/ decreasing distance stronger than expected	Image processing takes longer than feasible, because "more world" has to be covered
806	Observer - Optomechanics	More (more of, higher)	Field of View	Observer uses a bigger FOV than expected	Details are lost for the sake of a bigger FOV.	The lens system has to change the focus distance accordingly, otherwise the system is out of focus
807	Observer - Optomechanics	More (more of, higher)	Field of View	Observer uses a bigger FOV than expected	Objects appear smaller than expected	
808	Observer - Optomechanics	More (more of, higher)	Field of View	Observer uses a bigger FOV than expected	Image distortion (pillow) and vignetting can become remarkable	
809	Observer - Optomechanics	More (more of, higher)	Field of View	Observer uses a bigger FOV than expected	View has probably more overlap with another view	
810	Observer - Optomechanics	More (more of,	Field of View	Observer uses a bigger FOV than	System will be out of focus	

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
		higher)		expected		
811	Observer - Optomechanics	Less (less of, lower)	Field of View	Observer uses a smaller FOV than expected	Focal length larger than expected	Objects interpreted than expected
812	Observer - Optomechanics	Less (less of, lower)	Field of View	Observer uses a smaller FOV than expected	Less of scene captured than expected - overview reduced	Relevant scene elements not seen (not within image)
813	Observer - Optomechanics	Less (less of, lower)	Field of View	Observer uses a smaller FOV than expected	Objects appear bigger than expected	Connection to previous view might be lost - (registration/ visual odometry wrong)
814	Observer - Optomechanics	Less (less of, lower)	Field of View	Observer uses a smaller FOV than expected	Objects size shrinks with distance weaker than expected	The lens system has to change the focus distance accordingly, otherwise the system is out of focus
815	Observer - Optomechanics	Less (less of, lower)	Field of View	Observer uses a smaller FOV than expected	View has probably less overlap with previous view	
816	Observer - Optomechanics	Less (less of, lower)	Field of View	Observer uses a smaller FOV than expected	System will be out of focus	
817	Observer - Optomechanics	Less (less of, lower)	Field of View	Observer uses a smaller FOV than expected	Motion estimation possibly hampered (Aperture Problem see [Hildreth+83])	
818	Observer - Optomechanics	As well as	Field of View	Viewing angle both larger and smaller than expected ® aspect ratio different from expected	Scene appears compressed along one image axis	Objects appearance misinterpreted
819	Observer - Optomechanics	As well as	Field of View	Viewing angle both larger and smaller than expected ® aspect ratio different from expected		Objects confused
820	Observer - Optomechanics	As well as	Field of View	Multiple Observers are used together	Intersection of FOVs needed to merge information	See Calib. of Algorithm
821	Observer - Optomechanics	As well as	Field of View	Multiple Observers are used together	See Num	See Num
822	Observer - Optomechanics	Part of	Field of View	Part of FOV is always blocked	See Observer Less Transp	See Observer Less Transp
823	Observer - Optomechanics	Part of	Field of View	Part of FOV is always blocked	See Medium Less Transp	See Medium Less Transp
824	Observer - Optomechanics	Part of	Field of View	Part of FOV is always blocked	See Obj. Close (spat.)	
825	Observer -	Reverse	Field of View	Aspect ratio	See Orientation	See Orientation

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
	Optomechanics			reversed (e.g. portrait instead of landscape)		
826	Observer - Optomechanics	Reverse	Field of View	FOV points in opposite direction than expected	See Orientation	See Orientation
827	Observer - Optomechanics	Other than	Field of View	Orientation/ Position is Other than expected	Tilt view	Objects not recognized
828	Observer - Optomechanics	Other than	Field of View	Orientation/ Position is Other than expected	View upside down	Whole scene not correctly recognized
829	Observer - Optomechanics	Spatial periodic	Field of View	FOV changes its orientation periodically	Can miss things happening in overall (connected) FOV	Detection fails
830	Observer - Optomechanics	Spatial aperiodic	Field of View	FOV changes spatially and temporally aperiodical	See periodic	See periodic
831	Observer - Optomechanics	Temporal periodic	Field of View	FOV changes in a temporally periodic manner	FOV changes in a periodic manner	Continuous confusion of CV alg.
832	Observer - Optomechanics	Temporal periodic	Field of View	FOV changes in a temporally periodic manner	See Spatial periodic	See Spatial Periodic
833	Observer - Optomechanics	Temporal aperiodic	Field of View	FOV changes in a temporally irregular manner	FOV changes in temporally non-periodic manner	Continuous confusion of CV alg.
834	Observer - Optomechanics	Close	Field of View	The FOVs of two observers have a large overlap	Leads to small disparities in corresponding points	See Close (spat.) Num
835	Observer - Optomechanics	Close	Field of View	The FOVs of two observers have a large overlap	See Close (spat.) Num	
836	Observer - Optomechanics	Remote	Field of View	The FOVs of two observers have a small overlap	Leads to large disparities in corresponding points	See Remote (spat.) Num
837	Observer - Optomechanics	Remote	Field of View	The FOVs of two observers have a small overlap	See Remote (spat.) Num	
838	Observer - Optomechanics	Before	Field of View	FOV changes earlier than expected	FOV changes earlier than expected	CV system misinterprets scene phase
839	Observer - Optomechanics	After	Field of View	FOV changes later than expected	FOV changes later than expected	See Before
840	Observer - Optomechanics	In front of	Field of View	One observer is in front of the other	The Object characteristics of the observer in front are captured by rear observer	Possible misdetections, the front observer is mistaken for an object of interest
841	Observer - Optomechanics	In front of	Field of View	One observer is in front of the other	See Close	Front observer blocks the view of the rear one (See Obj. Position Close)

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
842	Observer - Optomechanics	In front of	Field of View	One observer is in front of the other		See Close
843	Observer - Optomechanics	Behind	Field of View	One observer is in front of the other	See in front of	See in front of
844	Observer - Optomechanics	Faster	Field of View	FOV changes faster than expected	PTZ movement motion blur	PTZ motion confused with Observer motion
845	Observer - Optomechanics	Slower	Field of View	FOV changes slower than expected	Wrong section of scene captured	See More/Less
846	Observer - Optomechanics	No (not none)	Viewing orientation	Relative orientation of observer in world unknown	Camera orientation undefined	Miscalculation of relative positions
847	Observer - Optomechanics	No (not none)	Viewing orientation	Relative orientation of observer in world unknown	See No FOV	Miscalculation of all consecutive steps
848	Observer - Optomechanics	No (not none)	Viewing orientation	Relative orientation of observer in world unknown		See No FOV
849	Observer - Optomechanics	More (more of, higher)	Viewing orientation	Observer is more oriented towards ROI than expected	The object did not enter the FOV, this entrance event is not captured	Missed detection of dynamic objects
850	Observer - Optomechanics	Less (less of, lower)	Viewing orientation	VOrient Less oriented towards ROI than expected	Only part of relevant scene is captured	Wrong objects confused with expected ones
851	Observer - Optomechanics	Less (less of, lower)	Viewing orientation	VOrient Less oriented towards ROI than expected		Scene not correctly recognized
852	Observer - Optomechanics	Less (less of, lower)	Viewing orientation	VOrient Less oriented towards ROI than expected		Unusual objects in scene cause longer processing time than allowed
853	Observer - Optomechanics	Part of	Viewing orientation	Misorientation in only one or two rotational axis	See Less	See Less
854	Observer - Optomechanics	Reverse	Viewing orientation	Observer looks in the opposite direction than expected	FOV includes very different scene than expected	See Other than
855	Observer - Optomechanics	Other than	Viewing orientation	Observer oriented towards a wrong direction	(Completely) different scene captured	Wrong objects confused with expected ones
856	Observer - Optomechanics	Other than	Viewing orientation	Observer oriented towards a wrong direction		Nothing correctly recognized
857	Observer - Optomechanics	Other than	Viewing orientation	Observer oriented towards a wrong direction		Unusual objects in scene causes longer processing time than allowed
858	Observer - Optomechanics	Where else	Viewing orientation	See Other than	See Other than	See Other than
859	Observer -	Spatial	Viewing	Observer	Best orientation to	Misdetections

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
	Optomechanics	periodic	orientation	orientation can only be set to discrete values	center view on object or capture multiple objects in one view cannot be used as it is not available due to the movement discretization	
860	Observer - Optomechanics	Spatial periodic	Viewing orientation	Observer orientation can only be set to discrete values	Objects might be partially outside the FOV	Incomplete reconstruction (holes)
861	Observer - Optomechanics	Spatial periodic	Viewing orientation	Observer orientation can only be set to discrete values	Spatial aliasing possible	
862	Observer - Optomechanics	Spatial aperiodic	Viewing orientation	VOrient is not constrained (within a given range)	Additional uncertainties due to arbitrary viewing direction	Additional uncertainties introduce additional uncertainties for the position estimation of objects relative to each other
863	Observer - Optomechanics	Spatial aperiodic	Viewing orientation	VOrient is not constrained (within a given range)		
864	Observer - Optomechanics	Temporal periodic	Viewing orientation	VOrient changes in a temporally periodic manner	Motion blur	Periodic misinterpretation of scene
865	Observer - Optomechanics	Temporal periodic	Viewing orientation	VOrient changes in a temporally periodic manner	Captured FOV changes in a periodically manner	Periodic violation of computing time limits
866	Observer - Optomechanics	Temporal periodic	Viewing orientation	VOrient changes in a temporally periodic manner	Coupled with synchronised exposure, only a fraction of scene could be recorded over longer periods of time	Aliasing frequency is taken for real
867	Observer - Optomechanics	Temporal periodic	Viewing orientation	VOrient changes in a temporally periodic manner	Can miss things happening in overall (connected) FOV	
868	Observer - Optomechanics	Temporal periodic	Viewing orientation	VOrient changes in a temporally periodic manner	Temp. aliasing if the frequency exceeds half the frame rate	
869	Observer - Optomechanics	Temporal aperiodic	Viewing orientation	VOrient changes in a temporally aperiodic manner	Motion blur	Occasional misinterpretation of scene
870	Observer - Optomechanics	Temporal aperiodic	Viewing orientation	VOrient changes in a temporally aperiodic manner	Captured scene cut-out changes in an irregular manner	Occasional violation of computing time limits
871	Observer - Optomechanics	Temporal aperiodic	Viewing orientation	VOrient changes in a temporally aperiodic manner	Uncertainty of position over time is increased	
872	Observer -	Before	Viewing	VOrient changes	ROI lost earlier than	Relevant aspects in

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
	Optomechanics		orientation	earlier than expected	expected	scene not more captured
873	Observer - Optomechanics	Before	Viewing orientation	VOrient changes earlier than expected	Following an object is difficult	Moving object might not be detected
874	Observer - Optomechanics	After	Viewing orientation	VOrient changes later than expected	Changing ROI lost (temporally)	See Before
875	Observer - Optomechanics	After	Viewing orientation	VOrient changes later than expected	Following an object is difficult	
876	Observer - Optomechanics	Faster	Viewing orientation	VOrient changes faster than expected	Observer rotation blur	Blur wrongly interpreted as high speed of Observer
877	Observer - Optomechanics	Faster	Viewing orientation	VOrient changes faster than expected	Aliasing if periodic too fast for the given frame rate	See Temporal periodic
878	Observer - Optomechanics	Slower	Viewing orientation	VOrient changes slower than expected	See After	See After
879	Observer - Optomechanics	No (not none)	Viewing position	Observer position unknown	Uncertainties in scene localisation	Misinterpretation of scene and contained objects
880	Observer - Optomechanics	As well as	Viewing position	Multiple observers at different positions are used together	Several Observer pos.s increase computational complexity	Image mismatch causes wrong scene interpretation
881	Observer - Optomechanics	As well as	Viewing position	Multiple observers at different positions are used together	Several Observer pos.s increase potential for making mistakes in fusing Observer data	Non-overlapping parts cannot be used, or are not interpreted correctly.
882	Observer - Optomechanics	As well as	Viewing position	Multiple observers at different positions are used together	Optical (lens) effects can be different in corresponding images	Different optical effects hamper registration / matching
883	Observer - Optomechanics	Part of	Viewing position	VPos is Part of scene (within scene)	Sensor too close to scene - scene partially defocused	Defocused objects not correctly recognized
884	Observer - Optomechanics	Other than	Viewing position	VPos not at expected position with respect to scene	Scene appears different from expected (different perspective on scene than expected)	Scene (partially) misinterpreted
885	Observer - Optomechanics	Other than	Viewing position	Observers camera center is at a different position than expected	Offset between the camera center and the center of mechanical camera rotation differs from the expectation (that can be 0)	Wrong expectation of the camera housings position can lead to collisions
886	Observer - Optomechanics	Other than	Viewing position	Observers camera center is at a different position than expected	The placement of the observers housing is different than expected	

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
887	Observer - Optomechanics	Other than	Viewing position	Principal point position is different than expected	Different representations of origins are confused	Miscalculations in positions
888	Observer - Optomechanics	Other than	Viewing position	Principal point position is different than expected		Shifts in position calculation
889	Observer - Optomechanics	Spatial periodic	Viewing position	Observer position can only be set to discrete values	Preferred best position (to optimally capture the object(s) of interest) cannot be achieved	Misdetections
890	Observer - Optomechanics	Spatial periodic	Viewing position	Observer position can only be set to discrete values		
891	Observer - Optomechanics	Spatial periodic	Viewing position	Observer position can only be set to discrete values		
892	Observer - Optomechanics	Spatial aperiodic	Viewing position	Observer position is not constrained (perhaps within a given range)	Additional uncertainties due to arbitrary position of observer	Additional uncertainties introduce additional uncertainties for the position estimation of objects
893	Observer - Optomechanics	Close	Viewing position	VPos is closer to scene than expected ó object distance shorter	Object distance is shorter than expected (out of focus)	Too close objects confuse scene interpretation
894	Observer - Optomechanics	Close	Viewing position	VPos is closer to scene than expected ó object distance shorter	Objects have more details than expected	See Less Focus
895	Observer - Optomechanics	Close	Viewing position	VPos is closer to scene than expected ó object distance shorter	View contains less objects than expected	See Object Pos. Close
896	Observer - Optomechanics	Close	Viewing position	VPos is closer to scene than expected ó object distance shorter	View includes only part of the object instead of whole objects	
897	Observer - Optomechanics	Close	Viewing position	VPos is closer to scene than expected ó object distance shorter	Objects too close to Observer to capture their significance	
898	Observer - Optomechanics	Remote	Viewing position	VPos is more remote from scene than expected	Object distance is bigger than expected (out of focus)	Relevant scene details not recognized
899	Observer - Optomechanics	Remote	Viewing position	VPos is more remote from scene than expected	Object have less details than expected	Objects distances estimated less accurate
900	Observer - Optomechanics	Remote	Viewing position	VPos is more remote from scene than	View contains more objects than expected	

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
				expected		
901	Observer - Optomechanics	Remote	Viewing position	VPos is more remote from scene than expected	View includes whole objects instead of viewing sections/parts of the object	
902	Observer - Optomechanics	Remote	Viewing position	VPos is more remote from scene than expected	Relevant scene elements (objects) too remote from Observer	
903	Observer - Optomechanics	Behind	Viewing position	Observer is at a position where the expected view is blocked	See Objects Occl.	See Objects Occl.
904	Observer - Optomechanics	Faster	Viewing position	Observer moves faster than expected	Motion blur more likely with longer exposures	Blurred objects misdetected
905	Observer - Optomechanics	Faster	Viewing position	Observer moves faster than expected	Less time for observing scene	Scene wrongly interpreted
906	Observer - Optomechanics	Faster	Viewing position	Observer moves faster than expected	Internal representation lags behind observed scene	
907	Observer - Optomechanics	Slower	Viewing position	Observer moves slower than expected	Internal representation runs ahead observed scene	Scene wrongly interpreted
908	Observer - Optomechanics	No (not none)	Transparency	The sensor optics is not transparent at all	No light transmits them.	Confusion with "complete darkness"
909	Observer - Optomechanics	No (not none)	Transparency	The sensor optics is not transparent at all		Sensor does not detect that its blind but reports exaggerated/ extrapolated data
910	Observer - Optomechanics	More (more of, higher)	Transparency	The sensor optics is more transparent than expected	Overall scene intensity as received by the electronics is higher than expected	Overexposure, at least of specific objects
911	Observer - Optomechanics	More (more of, higher)	Transparency	The sensor optics is more transparent than expected	Light with unexpected (unwanted) frequencies is received by Obs. electronics	Misinterpretation of whole scene or at least some objects
912	Observer - Optomechanics	More (more of, higher)	Transparency	The sensor optics is more transparent than expected	Colours or relative intensities (between Obj.s) as received differ from expected ones	
913	Observer - Optomechanics	Less (less of, lower)	Transparency	The sensor optics is less transparent than expected	Only part of expected light is received by Obs. electronics	Underexposure
914	Observer -	Less	Transparency	The sensor optics		Misinterpretation of

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
	Optomechanics	(less of, lower)		is less transparent than expected		whole scene or at least of some objects
915	Observer - Optomechanics	As well as	Transparency	The sensor optics is both more and less trans-parent at the same time	Combination of More and Less	Parts of scene are misinterpreted
916	Observer - Optomechanics	Part of	Transparency	Part of optics are less transparent than expected (e.g. dirt on lens)	Defocused areas	Misdetections
917	Observer - Optomechanics	Part of	Transparency	Part of optics are less transparent than expected (e.g. dirt on lens)	Dirt creates virtual pattern on sensor	
918	Observer - Optomechanics	Part of	Transparency	Observer block part of the image	Parts of the image are black	(Partially) Blocked Objects are not detected
919	Observer - Optomechanics	Part of	Transparency	Observer block part of the image	Objects may be (partially) invisible (in black image area)	Information within the blocked FOV cannot be interpreted
920	Observer - Optomechanics	Part of	Transparency	Observer block part of the image		See Part of FOV
921	Observer - Optomechanics	Other than	Transparency	The transparency of sensor optics is completely different from expected, e.g. due to broken lenses	The scene looks completely differently than expected, e.g. parts of it are multiplied	Strong confusion of CV alg. if fault not detected
922	Observer - Optomechanics	Where else	Transparency	Lens body is not completely light proof, light can reach sensor from the side of the body	Flare effects	See More
923	Observer - Optomechanics	Where else	Transparency	Lens body is not completely light proof, light can reach sensor from the side of the body	See More	Additional light effects misinterpreted as scene components
924	Observer - Optomechanics	Spatial periodic	Transparency	The transparency of the lenses changes in a spatially periodic manner	Parts of the FOV are blocked reduced in intensity	Strong confusion of CV alg.
925	Observer - Optomechanics	Spatial aperiodic	Transparency	The transparency of the lenses changes in a spatially irregularly manner,	The intensity of the image is irregularly reduced	CV alg. is hampered.
926	Observer - Optomechanics	Spatial aperiodic	Transparency	The transparency of the lenses changes in a spatially irregularly manner,		In particular, dense stereo vision is significantly hampered, since pollution is very likely different for

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
						both cameras.
927	Observer - Optomechanics	Temporal periodic	Transparency	Transparency changes in a temporally periodic manner	See Less	If not learned and compensated, See Less
928	Observer - Optomechanics	Temporal aperiodic	Transparency	Transparency changes in a temporally aperiodic manner	See Less	
929	Observer - Optomechanics	Close	Transparency	Last lens in assembly has different transparency than expected	See Other Than/ Less/More	See Other Than/ Less/More
930	Observer - Optomechanics	Remote	Transparency	First lens in assembly has different transparency than the rest	The lens system either magnifies local transparency changes or focuses them	See Less, Part of
931	Observer - Optomechanics	Remote	Transparency	First lens in assembly has different transparency than the rest	For global effects: See More Less	
932	Observer - Optomechanics	Before	Transparency	Shutter opens or closes before this is expected	Exposure time differs from expected	See Less/More/ Faster Exposure
933	Observer - Optomechanics	Before	Transparency	Shutter opens or closes before this is expected	Photoelectric events are exposed to light out of schedule	Rolling Shutter is causing artefacts which are misinterpreted as object properties
934	Observer - Optomechanics	Before	Transparency	Shutter opens or closes before this is expected	Over/Under-exposure, See Less Exposure	
935	Observer - Optomechanics	Before	Transparency	Shutter opens or closes before this is expected	Rolling-shutter effect can occur, if image sensor is reading data while the shutter is open, See Slower Exposure	
936	Observer - Optomechanics	Before	Transparency	Shutter opens or closes before this is expected	Not synchronized with flash trigger, See Before L.s Intensity	
937	Observer - Optomechanics	After	Transparency	Shutter opens or closes after this is expected	See Before Transp.	
938	Observer - Optomechanics	In front of	Transparency	Something is directly in front of the lens (e.g. dirt)	See Less, Part of	See Less, Part of
939	Observer - Optomechanics	Behind	Transparency	Something is trapped behind the lens (e.g. dirt)	See Less, Part of	See Less, Part of
940	Observer - Optomechanics	No (not none)	Spectrum	No colour is transmitted	Objects not emitting (reflecting	Underexposure (less energy

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
				(monochromatic), because only a very small fraction of spectrum is passed	etc.) light in this range are "black"	transmitted)Most objects not (correctly) recognized
941	Observer - Optomechanics	No (not none)	Spectrum	No colour is transmitted (monochromatic), because only a very small fraction of spectrum is passed		Objects are not distinguishable any more
942	Observer - Optomechanics	No (not none)	Spectrum	No colour is transmitted (monochromatic), because only a very small fraction of spectrum is passed		Confusion of shadows with 'black' objects
943	Observer - Optomechanics	More (more of, higher)	Spectrum	Lenses add intensity at certain frequencies	Some incoming colours are more adulterated than others	Object classification is hampered (confusion of similar objects or object parts
944	Observer - Optomechanics	More (more of, higher)	Spectrum	Lenses add intensity at certain frequencies		Textures not distinguished or confused
945	Observer - Optomechanics	More (more of, higher)	Spectrum	Lens transmits more of the incoming spectrum than expected	Unwanted spectral components of light hit the sensor (e.g. IR or UV)	Effects caused by unwanted spectral components occur (E.g.: noise or exceeding the dynamic range of the sensor)
946	Observer - Optomechanics	More (more of, higher)	Spectrum	Lens transmits more of the incoming spectrum than expected	Reduction of received light to distinguish e.g. different l.s.s cannot be used	Intended selection of view-specific scene components fails
947	Observer - Optomechanics	Less (less of, lower)	Spectrum	Lenses are opaque to many frequencies in visual range	Reduces contrast	Certain image features are lost
948	Observer - Optomechanics	Less (less of, lower)	Spectrum	Lenses are opaque to many frequencies in visual range	Different colours than expected	Misinterpretation
949	Observer - Optomechanics	Less (less of, lower)	Spectrum	Lenses are opaque to many frequencies in visual range		Misdetection
950	Observer - Optomechanics	As well as	Spectrum	See More and Less	See More and Less	See More and Less
951	Observer - Optomechanics	Part of	Spectrum	See less	See More and Less	See More and Less
952	Observer - Optomechanics	Reverse	Spectrum	A range of spectrum that is expected to be	See Meaning	Photo elements are disturbed by the passing spectrum

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
				omitted is passing while the desired range is passed		
953	Observer - Optomechanics	Other than	Spectrum	Lenses absorb certain frequencies and reemit them at other wave lengths	Most (or all) incoming colours are changed	See more
954	Observer - Optomechanics	Where else	Spectrum	Different parts of spectrum are transmitted to different locations	Chromatic aberration (achromatism): coloured edges	Edge detection and segmentation is hampered
955	Observer - Optomechanics	Where else	Spectrum	Different parts of spectrum are transmitted to different locations	Washed-out/ Defocused edges	Stereo imaging: matching preciseness decreased
956	Observer - Optomechanics	Spatial periodic	Spectrum	Analogous to Transp.	Spectral errors are coupled to compound lenses	Combination of "Where else" and "Transp."
957	Observer - Optomechanics	Spatial aperiodic	Spectrum	The spectral effects of the lens changes in a spatially aperiodic manner	Diffuse coloured edges occur around objects (above a certain contrast level)	See where else
958	Observer - Optomechanics	Close	Spectrum	Objects close to each other (adjacent) get their spectra merged	See Where else	See Where else
959	Observer - Optomechanics	Faster	Spectrum	Observer is moved sufficiently fast to cause Doppler effect	Colours of fast moving objects are changed	Misinterpretation of fast moving objects
960	Observer - Optomechanics	No (not none)	Lenses number	No lenses are used	Defocusing	See Less Focus
961	Observer - Optomechanics	More (more of, higher)	Lenses number	More lenses are in lens assembly than expected	More reflections between lenses	Lens reflections are mis-interpreted as textures or objects
962	Observer - Optomechanics	More (more of, higher)	Lenses number	More lenses are in lens assembly than expected	Lens reflections appear in image	Underexposure
963	Observer - Optomechanics	More (more of, higher)	Lenses number	More lenses are in lens assembly than expected	Transmitted frequencies are more filtered - stronger filtering, more dimming, less contrast	See also Less Transp.
964	Observer - Optomechanics	Less (less of, lower)	Lenses number	Less lenses are in lens assembly than expected	"More uncorrected chromatic lens errors	i.e. aberration: halos, glares"
965	Observer - Optomechanics	Less (less of, lower)	Lenses number	Less lenses are in lens assembly than expected	Coma: small bright objects show a coma-like effect towards the image boarder	Coma, halo, glare: misinterpreted as objects or texture
966	Observer -	Less	Lenses	Less lenses are in	Astigmatism:	Astigmatism:

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
	Optomechanics	(less of, lower)	number	lens assembly than expected	(Occurs for each lens) Rays from a point off the optical axis are less focused on the image pane is usually reduced in multi-lens arrangements	object's shape wrongly computed , or object's distance wrongly computed
967	Observer - Optomechanics	Less (less of, lower)	Lenses number	Less lenses are in lens assembly than expected	More light intensity gets through the whole lens assembly (more intensity at image)	Overexposure
968	Observer - Optomechanics	Less (less of, lower)	Lenses number	Less lenses are in lens assembly than expected	More contrast than expected	See also More Transp.
969	Observer - Optomechanics	Less (less of, lower)	Lenses number	Less lenses are in lens assembly than expected	More saturation than expected	See Less Focus, Other than FOV
970	Observer - Optomechanics	As well as	Lenses number	Multiple different lens assemblies are used	Different lens effects than expected	Registration and matching of images hampered
971	Observer - Optomechanics	Part of	Lenses number	Part of the lens assembly is missing	See Where else Trans	See Where else Trans
972	Observer - Optomechanics	Reverse	Lenses number	Lens body is used in reversed order	Projected real/ virtual image size very different from expected	Failure to detect misconfiguration leads to wrong interpretations in size or distance
973	Observer - Optomechanics	Reverse	Lenses number	Lens body is used in reversed order	Object sizes different from expected	See Less Focus, Other than FOV
974	Observer - Optomechanics	Other than	Lenses number	Different number of lenses than expected are used	Changed amount of optical aberration	See Less Focus, Other than FOV
975	Observer - Optomechanics	Other than	Lenses number	Different number of lenses than expected are used	Different focal length than expected	
976	Observer - Optomechanics	Where else	Lenses number	Lenses are arranged differently than expected	Changed amount of optical aberration	See Less Focus, Other than FOV
977	Observer - Optomechanics	Where else	Lenses number	Lenses are arranged differently than expected	Different focal length than expected	
978	Observer - Optomechanics	Close	Lenses number	Lenses in the assembly are too close together	Optical aberrations are not corrected as expected	Increased aberration misinterpreted as virtual pattern
979	Observer - Optomechanics	Remote	Lenses number	Lenses in the assembly are too far apart	Too many total reflections between lenses	Resulting optical effects misinterpreted as objects or virtual patterns
980	Observer -	No (not	Lenses	Lenses are flat	Lenses cannot be	See No Focus

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
	Optomechanics	none)	geometry	(simple window)	used to focus	
981	Observer - Optomechanics	No (not none)	Lenses geometry	Lenses are flat (simple window)	Lenses cannot be used to reduce optical aberration	
982	Observer - Optomechanics	More (more of, higher)	Lenses geometry	More optical effects due to strongly curved lens surfaces	Distortion: barrel or pincushion	Distortion: scene geometry misinterpreted
983	Observer - Optomechanics	More (more of, higher)	Lenses geometry	More optical effects due to strongly curved lens surfaces	Vignetting: image darkening towards the edges	Vignetting: increased
984	Observer - Optomechanics	More (more of, higher)	Lenses geometry	More optical effects due to strongly curved lens surfaces	Focus range is limited in distance (near-sighted)	Underexposure
985	Observer - Optomechanics	More (more of, higher)	Lenses geometry	More optical effects due to strongly curved lens surfaces		Misinterpretation of colours
986	Observer - Optomechanics	More (more of, higher)	Lenses geometry	More optical effects due to strongly curved lens surfaces		Misinterpretation of shadows
987	Observer - Optomechanics	More (more of, higher)	Lenses geometry	More optical effects due to strongly curved lens surfaces		towards the edges,
988	Observer - Optomechanics	More (more of, higher)	Lenses geometry	More optical effects due to strongly curved lens surfaces		Remote objects poorly recognized
989	Observer - Optomechanics	Less (less of, lower)	Lenses geometry	Less optical corrections due to weakly curved lens surfaces	Focus range is limited in distance (long-sighted)	Close objects defocused - poorly recognized
990	Observer - Optomechanics	As well as	Lenses geometry	Lens surface is weaker on one side and stronger curved on the other side of the lens surface than expected	See More/Less	See More/Less
991	Observer - Optomechanics	Part of	Lenses geometry	Part of lens have other geometry than expected	Non-uniform deformation of image	Distances and object sizes can be miscalculated
992	Observer - Optomechanics	Part of	Lenses geometry	Part of lens have other geometry than expected		See Less Focus
993	Observer - Optomechanics	Part of	Lenses geometry	Part of one lens is missing or lens is scattered	Crack/ Edge of lens pieces introduce complex patterns and interreflections	Objects in Blocked/ Defocused areas of the image are not correctly detected
994	Observer - Optomechanics	Part of	Lenses geometry	Part of one lens is missing or lens is scattered	Visible Cracks/ Edges block/ defocus parts of the scene	Cracks/Edges are confused with objects

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
995	Observer - Optomechanics	Reverse	Lenses geometry	Lens optics are reverse to expected	Lens is zooming out instead of in and vice versa	Wrong distances to objects are estimated
996	Observer - Optomechanics	Other than	Lenses geometry	Lenses have a different geometry than expected	See More/Less	See More/Less
997	Observer - Optomechanics	Spatial periodic	Lenses geometry	Lens geometry has a periodic pattern	Lens structure introduces a virtual pattern of distortions	Virtual pattern (kaleidoscopic) is confused with object pattern
998	Observer - Optomechanics	Spatial aperiodic	Lenses geometry	Spatial aperiodic disturbance or imperfections of lens geometry	Bright rays virtually emanate from bright objects within scene	Objects in defect zones of image are not detected correctly
999	Observer - Optomechanics	Spatial aperiodic	Lenses geometry	Spatial aperiodic disturbance or imperfections of lens geometry	Imperfections create zones of increased defocus and aberrations	"Defects are confused with objects
1.000	Observer - Optomechanics	Spatial aperiodic	Lenses geometry	Spatial aperiodic disturbance or imperfections of lens geometry	Imperfections create virtual patterns	Locations (disparities) are corrupted
1.001	Observer - Optomechanics	Temporal aperiodic	Lenses geometry	LGeom changes over time due to environmental conditions or aging	See Other Than FOV	See Other Than FOV
1.002	Observer - Optomechanics	Temporal aperiodic	Lenses geometry	LGeom changes over time due to environmental conditions or aging	Compensations due to calibration do not fit the actual observers behaviour any more	Overcompensation of distortion and wrong focal length (See Other Than Calibration)
1.003	Observer - Optomechanics	After	Lenses geometry	Lens geometry changes after calibration has been performed	See Temporal aperiodic	See Temporal aperiodic
1.004	Observer - Optomechanics	After	Lenses geometry	Lens geometry changes after calibration has been performed	See Other Than Calibration	See Other Than Calibration
1.005	Observer - Optomechanics	Behind	Lenses geometry	Lens has imperfections inside its medium ("Behind surface")	See Spatial aperiodic / Part of	See Spatial aperiodic / Part of
1.006	Observer - Optomechanics	Faster	Lenses geometry	Lens geometry changes faster (between calibration intervals) than expected	See Temporal aperiodic	See Temporal aperiodic
1.007	Observer - Optomechanics	Faster	Lenses geometry	Lens geometry changes faster (between calibration intervals) than expected	See Other Than Calibration	See Other Than Calibration
1.008	Observer -	No (not	Focusing	No part of scene	Highly defocused	Image recognition

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
	Optomechanics	none)		is within DOF	image, but different distances within scene show different degrees of defocusing	severely hampered
1.009	Observer - Optomechanics	No (not none)	Focusing	Lenses are not shaped to allow focusing	See above	See above
1.010	Observer - Optomechanics	No (not none)	Focusing	Lenses are not shaped to allow focusing	See FOV No 2	
1.011	Observer - Optomechanics	More (more of, higher)	Focusing	DoF is larger than expected	Larger depth of field than expected, e.g. background as sharp as foreground	CV alg. exploiting difference between sharply edged and blurred segments are hampered
1.012	Observer - Optomechanics	More (more of, higher)	Focusing	DoF is larger than expected	Contrast is increased	Separation of objects from background hampered
1.013	Observer - Optomechanics	More (more of, higher)	Focusing	DoF is larger than expected	More objects are clearly visible than expected	Computing time increased
1.014	Observer - Optomechanics	More (more of, higher)	Focusing	DoF is larger than expected	Reduces accuracy in shape from focus	3D reconstruction is smeared or corrupted at all
1.015	Observer - Optomechanics	Less (less of, lower)	Focusing	DoF is smaller than expected	Smaller depth of field than expected	Objects cannot be completely recognised
1.016	Observer - Optomechanics	Less (less of, lower)	Focusing	DoF is smaller than expected	Essential scene parts are out of focus	Blurred image areas misinterpreted as being empty or "medium only"
1.017	Observer - Optomechanics	Less (less of, lower)	Focusing	DoF is smaller than expected	Blurry image	Detection of edges and their correct position deteriorated
1.018	Observer - Optomechanics	Less (less of, lower)	Focusing	DoF is smaller than expected	Edges are smoothed	
1.019	Observer - Optomechanics	Less (less of, lower)	Focusing	DoF is smaller than expected	Contrast is reduced	
1.020	Observer - Optomechanics	As well as	Focusing	Focusing on multiple different distances (special optics or plenoptic camera)	Multiple different distances are sharp, with defocused zones in between	Multiple focal planes confuse CV alg.
1.021	Observer - Optomechanics	Part of	Focusing	Depth of field is (strongly) limited	Parts of scene are out of focus	See Less
1.022	Observer - Optomechanics	Other than	Focusing	Focal distance is at another distance than expected	Another distance is sharply mapped than expected - unwanted objects are sharply mapped	Wrong objects recognised
1.023	Observer - Optomechanics	Other than	Focusing	Focal distance is at another distance than		Shape from focus => wrong distance estimation

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
				expected		
1.024	Observer - Optomechanics	Spatial aperiodic	Focusing	The optics focus parts of the image different than others	Image always partially out of focus	See Less
1.025	Observer - Optomechanics	Spatial aperiodic	Focusing	The optics focus parts of the image different than others	See Less	See Other than
1.026	Observer - Optomechanics	Spatial aperiodic	Focusing	The optics focus parts of the image different than others	See Other than	
1.027	Observer - Optomechanics	Temporal periodic	Focusing	Focal changes periodically with time	Some or all effects from No to Other than appear periodically	* Some or all hazards from No to Other than occur periodically
1.028	Observer - Optomechanics	Temporal periodic	Focusing	Focal changes periodically with time	The plane in focus changes over time (intent for shape from focus)	
1.029	Observer - Optomechanics	Temporal aperiodic	Focusing	Focal changes aperiodically with time	Some or all effects from No to Other than appear in unpredictable order	* Some or all hazards from No to Other than occur periodically
1.030	Observer - Optomechanics	Close	Focusing	Depth of field is nearer than expected	"Wrong" objects in focal range	* "Wrong" objects recognized
1.031	Observer - Optomechanics	Remote	Focusing	Depth of field is more remote than expected	"Wrong" objects in focal range	"Wrong" objects recognized
1.032	Observer - Optomechanics	Before	Focusing	The focal distance is at a certain value before expected	"Wrong" objects in focus	In shape from focus a wrong distance is assumed
1.033	Observer - Optomechanics	Before	Focusing	Focusing is changed in advance of the object's movement	See Less	* See Less
1.034	Observer - Optomechanics	After	Focusing	The focal distance is at a certain value after expected	See Before	See Before
1.035	Observer - Optomechanics	After	Focusing	Focusing is changed too late after the object's movement	See Less	* See Less
1.036	Observer - Optomechanics	Faster	Focusing	Focus adapts faster than expected	Wrong DoF in slow changing scene	"Wrong" or no objects recognized
1.037	Observer - Optomechanics	Slower	Focusing	Focus adapts slower than expected	Wrong DoF in fast changing scene	"Wrong" or no objects recognized
1.038	Observer - Optomechanics	No (not none)	Aperture	No aperture is used	Very large circles of confusion	See Less Focus

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
1.039	Observer - Optomechanics	No (not none)	Aperture	No aperture is used	Very small DOF	
1.040	Observer - Optomechanics	No (not none)	Aperture	No aperture is used	See Less Focus	
1.041	Observer - Optomechanics	More (more of, higher)	Aperture	Aperture is more open than expected	Smaller DOF than expected	See Less Focus
1.042	Observer - Optomechanics	More (more of, higher)	Aperture	Aperture is more open than expected	Focusing has stronger influence on highlighting objects	
1.043	Observer - Optomechanics	More (more of, higher)	Aperture	Aperture is more open than expected	More light hitting electronics than necessary	Overexposure
1.044	Observer - Optomechanics	Less (less of, lower)	Aperture	Aperture is less open than expected	Larger DOF than expected	See More Focus
1.045	Observer - Optomechanics	Less (less of, lower)	Aperture	Aperture is less open than expected	Focusing has a weaker influence on highlighting objects	
1.046	Observer - Optomechanics	Less (less of, lower)	Aperture	Aperture is less open than expected	Less light hitting electronics than necessary	Underexposure
1.047	Observer - Optomechanics	As well as	Aperture	Aperture changes opening size multiple times during one exposure	Aperture-specific aberrations integrated ® broader but weaker aberrations	See Less Focus
1.048	Observer - Optomechanics	As well as	Aperture	Aperture changes opening size multiple times during one exposure	See Less Focus	
1.049	Observer - Optomechanics	Part of	Aperture	Aperture is only partially opened/ closed	See More/Less	See Less Focus
1.050	Observer - Optomechanics	Part of	Aperture	Aperture is only partially opened/ closed	Aperture is non-uniform	Asymmetric DoF
1.051	Observer - Optomechanics	Part of	Aperture	Aperture is only partially opened/ closed	Entrance and exit pupil degenerate to complex forms, as does the shape of a lens flare	Lens flare specific forms cannot be detected or compensated
1.052	Observer - Optomechanics	Part of	Aperture	Aperture is only partially opened/ closed	Increase of optical aberrations (including chromatic aberration)	
1.053	Observer - Optomechanics	Other than	Aperture	Aperture opening is different from expected	DOF different from expected	See More/Less
1.054	Observer - Optomechanics	Other than	Aperture	Aperture opening is different from expected	See More/Less	Over- or underexposure
1.055	Observer -	Other	Aperture	Aperture opening	Wrong image	

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
	Optomechanics	than		is different from expected	brightness	
1.056	Observer - Optomechanics	Where else	Aperture	Aperture is placed at a different location in the lens assembly than expected	Changed optical aberration amount	See Less Focus
1.057	Observer - Optomechanics	Where else	Aperture	Aperture is placed at a different location in the lens assembly than expected	Different DOF than expected	
1.058	Observer - Optomechanics	Where else	Aperture	Aperture form is projected into different places within the image	Visible highlight artifacts blend/ overexpose sections within the image	Objects not detected
1.059	Observer - Optomechanics	Where else	Aperture	Aperture form is projected into different places within the image	Chromatic aberration in shape of aperture (See More Colour)	Aperture projection is mistaken for an object
1.060	Observer - Optomechanics	Where else	Aperture	Aperture form is projected into different places within the image	Contrast of objects or parts of objects are reduced	
1.061	Observer - Optomechanics	Temporal periodic	Aperture	Aperture changes periodically	Periodic change of image brightness	Periodic change between over-, correct, and under-exposure
1.062	Observer - Optomechanics	Temporal periodic	Aperture	Aperture changes periodically	See Other than	See Other than
1.063	Observer - Optomechanics	Temporal aperiodic	Aperture	Aperture changes aperiodically	Aperiodic change of image brightness	Aperiodic change between over-, correct, and under-exposure
1.064	Observer - Optomechanics	Temporal aperiodic	Aperture	Aperture changes aperiodically	See Other than	See Other than
1.065	Observer - Optomechanics	Close	Aperture	Apert is closer to observer electronics than expected	See Other than	See Other than
1.066	Observer - Optomechanics	Remote	Aperture	Apert is more remote from observer electronics than expected	See Other than	See Other than
1.067	Observer - Optomechanics	Before	Aperture	Aperture changes later than expected	Overexposure	See Consequences
1.068	Observer - Optomechanics	After	Aperture	Aperture changes later than expected	Underexposure	See Consequences
1.069	Observer - Optomechanics	Faster	Aperture	Aperture changes faster than expected	See Other than	See Other than
1.070	Observer - Optomechanics	Slower	Aperture	Aperture changes slower than	See Other than	See Other than

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
				expected		
1.071	Observer - Optomechanics	No (not none)	Wave property	Wave property is not changed by the observer	See Less	See Less
1.072	Observer - Optomechanics	More (more of, higher)	Wave property	Wave property is changed stronger by the observer than expected	Light intensity is reduced by filtering	Sensor electronics receive and capture only a fraction of incoming light - underexposure, modified colours
1.073	Observer - Optomechanics	More (more of, higher)	Wave property	Wave property is changed stronger by the observer than expected	Light leaving lenses is strongly polarised	
1.074	Observer - Optomechanics	Less (less of, lower)	Wave property	Wave property is changed weaker by the observer than expected	Strength of filtering effects of different l.s. based on their wave property is reduced	Effects of different l.s. cannot be differentiated
1.075	Observer - Optomechanics	Less (less of, lower)	Wave property	Wave property is changed weaker by the observer than expected	Light leaving lenses is less polarised than expected	Effects of different l.s. are confused
1.076	Observer - Optomechanics	Less (less of, lower)	Wave property	Wave property is changed weaker by the observer than expected		Recording electronics overcompensate expected polarisation effects
1.077	Observer - Optomechanics	Part of	Wave property	(Only) Part of transmitted light is polarised	Different frequency ranges of light leaving lenses are differently polarised	Sensor electronics receive and capture different frequencies of incoming light different efficiently - modified colours
1.078	Observer - Optomechanics	Reverse	Wave property	Polarisation of transmitted light is reversed to expected	See Other than	See Other than
1.079	Observer - Optomechanics	Other than	Wave property	Polarisation of transmitted light is other than expected	See Meaning	Poor compensation or even exaggeration of lens effects by sensor electronics
1.080	Observer - Optomechanics	Spatial periodic	Wave property	Polarisation changes spatially periodically over optics area, e.g. concentric	Different polarisation effects at different image areas	"Like Other than, but in a spatially periodic manner, which causes overall scene misinterpretation
1.081	Observer - Optomechanics	Spatial aperiodic	Wave property	Polarisation changes spatially aperiodically over optics area	See Spatial periodic	Like Other than, but in a spatially irregular manner
1.082	Observer - Optomechanics	Temporal aperiodic	Wave property	Polarisation changes with operating temperature and/ or with age	Over time, polarisation properties change gradually and hardly predictable	In extreme cases, small influence on image quality

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
1.083	Observer - Optomechanics	No (not none)	Optical Point Spread Function	The PSF of the optical system is unknown	The image blur cannot be (partially) compensated	Errors of calculated object positions and extents have an unknown variance
1.084	Observer - Optomechanics	No (not none)	Optical Point Spread Function	The PSF of the optical system is unknown	The boundaries of objects in a blurred image are fuzzy	Misdetection of objects
1.085	Observer - Optomechanics	No (not none)	Optical Point Spread Function	The PSF of the optical system is unknown	The features of objects in a blurred image are fuzzy	
1.086	Observer - Optomechanics	No (not none)	Optical Point Spread Function	The PSF of the optical system is everywhere zero	The optics prevent light from reaching the sensor	See No Transp., ...
1.087	Observer - Optomechanics	No (not none)	Optical Point Spread Function	The PSF of the optical system is everywhere zero	See No Transp, Spectral Efficiency, No Exposure ...	
1.088	Observer - Optomechanics	No (not none)	Optical Point Spread Function	The PSF has only constant components (MSF is a single spike at frequency 0)	The whole sensor works like a single integrating pixel	See No Resolution
1.089	Observer - Optomechanics	No (not none)	Optical Point Spread Function	No optical blurring before discretisation	Aliasing artefacts	Large errors in location and orientation estimates
1.090	Observer - Optomechanics	No (not none)	Optical Point Spread Function	No optical blurring before discretisation	Staircasing of edges and lines	Apparent texture differs from true texture
1.091	Observer - Optomechanics	No (not none)	Optical Point Spread Function	No optical blurring before discretisation	Moiré patterns in intensity and colour of repetitive textures (e.g. stripes on clothing, brick walls)	Unpredictable differences between appearance of corresponding points/regions in consecutive frames
1.092	Observer - Optomechanics	More (more of, higher)	Optical Point Spread Function	The PSF's extent is larger (effecting a bigger neighbourhood of pixels) than expected	The amount of blurriness is larger than expected	See Less Focus
1.093	Observer - Optomechanics	More (more of, higher)	Optical Point Spread Function	The PSF's extent is larger (effecting a bigger neighbourhood of pixels) than expected	Loss of detail	Errors of calculated object positions and extents have a larger variance than assumed
1.094	Observer - Optomechanics	More (more of, higher)	Optical Point Spread Function	The PSF's extent is larger (effecting a bigger neighbourhood of pixels) than expected	Loss of contrast	Loss of small objects
1.095	Observer - Optomechanics	More (more of, higher)	Optical Point Spread Function	The PSF's extent is larger (effecting a bigger neighbourhood of pixels) than expected		Object shape distortions (e.g. rounded corners)

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
1.096	Observer - Optomechanics	Less (less of, lower)	Optical Point Spread Function	The PSF's extend is smaller (effecting a smaller neighbourhood of pixels) than expected	The amount of blurriness is smaller than expected	See More Focus
1.097	Observer - Optomechanics	Less (less of, lower)	Optical Point Spread Function	The PSF's extend is smaller (effecting a smaller neighbourhood of pixels) than expected		Any filtering assuming an e.g. Gaussian correlation between neighbouring pixels is hampered
1.098	Observer - Optomechanics	As well as	Optical Point Spread Function	Multiple PSFs are combined	Combination of multiple fuzziness	See More
1.099	Observer - Optomechanics	As well as	Optical Point Spread Function	Multiple PSFs are combined	The different PSF influences cannot be differentiated and are harder to compensate	
1.100	Observer - Optomechanics	As well as	Optical Point Spread Function	The PSF has multiple maxima	A shifted version of the image is blended with the original	Any positions an alg. has to find are ambiguous
1.101	Observer - Optomechanics	Part of	Optical Point Spread Function	The PSF is nearly circular except for some section	Anisotropic blurriness	Blur pattern might introduce fake virtual pattern in image that creates fake detections or interpretations
1.102	Observer - Optomechanics	Reverse	Optical Point Spread Function	The actual PSF is near to the inverted form of the expected point PSF	The effect of PSF differs from the expected one	PSF correction has the opposite effect, increasing effects as under More or Other than.
1.103	Observer - Optomechanics	Other than	Optical Point Spread Function	The PSF is different from the expected	Blur compensation is ineffective or even overcompensating (creates more distortions)	Correction of PSF creates additional pattern in the resulting image thus creating false detections and misinterpretations
1.104	Observer - Optomechanics	Where else	Optical Point Spread Function	The PSF form is shifted from the origin	The image is shifted	Any locations have an unexpected displacement
1.105	Observer - Optomechanics	Spatial periodic	Optical Point Spread Function	There are periodic pattern visible in the PSF, i.e. The PSF is spatially periodic	Additional small scale blurriness creating a spatial pattern	Contours of objects are duplicated and create possibility for confusions
1.106	Observer - Optomechanics	Spatial periodic	Optical Point Spread Function	There are periodic pattern visible in the PSF, i.e. The PSF is spatially periodic		
1.107	Observer -	Spatial	Optical Point	PSF changes	"Information quality	e.g. reduces from

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
	Optomechanics	periodic	Spread Function	regularly over the sensitive area (e.g. radially)	of the sensitive area changes regularly	centre outwards"
1.108	Observer - Optomechanics	Spatial aperiodic	Optical Point Spread Function	The PSF is not as periodic as expected	Image quality is greatly reduced due to irregular blurring pattern and speckles (high noise)	Misdetections
1.109	Observer - Optomechanics	Temporal periodic	Optical Point Spread Function	The PSF fluctuates periodically over time	Image quality/ blurriness fluctuates regularly over time	"Performance is not stable, results fade in/out all the time
1.110	Observer - Optomechanics	Temporal aperiodic	Optical Point Spread Function	The PSF is not as periodic as expected	The modelled PSF is changed periodically for de-convolution whereas the actual PSF is not => See Other Than	See Other Than
1.111	Observer - Optomechanics	Temporal aperiodic	Optical Point Spread Function	The PSF fluctuates chaotically over time	Blur compensation cannot keep up with chaotically changing blurriness	Image interpretation compromised due to irreversible blurriness
1.112	Observer - Optomechanics	Close	Optical Point Spread Function	The PSF is unexpected for close object distances	Image is more / less blurry than expected for objects with short distance	Over- and under-compensation of PSF during de-convolution
1.113	Observer - Optomechanics	Close	Optical Point Spread Function	The PSF is unexpected for close object distances		Inaccuracy in computation results
1.114	Observer - Optomechanics	Close	Optical Point Spread Function	The PSF is unexpected for close object distances		Up to compromised interpretation due to irreversible blurriness
1.115	Observer - Optomechanics	Remote	Optical Point Spread Function	The PSF is different for objects that are far away	Image is more / less blurry than expected for objects with far distance	See Close
1.116	Observer - Optomechanics	Remote	Optical Point Spread Function	The PSF is different for objects that are far away	Different PSF patterns may overlap in image regions where different object distances overlap	
1.117	Observer - Optomechanics	Faster	Optical Point Spread Function	PSF is changing faster than expected	See Other Than	See Other Than
1.118	Observer - Optomechanics	Slower	Optical Point Spread Function	PSF is changing slower than expected	See Other Than	See Other Than
1.119	Observer - Electronics	No (not none)	Exposure and shutter	Exposure is not triggered	No image is taken	Algorithm waits indefinitely on image from sensor, which never arrives

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
1.120	Observer - Electronics	More (more of, higher)	Exposure and shutter	Longer exposure time than expected	More light captured per image than expected	Overexposure
1.121	Observer - Electronics	More (more of, higher)	Exposure and shutter	Longer exposure time than expected	Latency: During exposure the current image data is not accessible	Motion blur if movement is to fast
1.122	Observer - Electronics	More (more of, higher)	Exposure and shutter	Longer exposure time than expected		Latency is a critical factor in every closed-loop control (oscillations, loosing)
1.123	Observer - Electronics	Less (less of, lower)	Exposure and shutter	Shorter exposure time than expected	Less light captured per image than expected	Underexposure
1.124	Observer - Electronics	Less (less of, lower)	Exposure and shutter	Shorter exposure time than expected		Effects which are usually filtered by averaging over time have a stronger impact
1.125	Observer - Electronics	As well as	Exposure and shutter	Multiple exposures	Multiple frames superimposed into one image	Number of elements is miscalculated
1.126	Observer - Electronics	As well as	Exposure and shutter	Multiple exposures		Movement is miscalculated
1.127	Observer - Electronics	Part of	Exposure and shutter	Only a part of photoelectric sensor area is exposed to light	Only parts of the image show the scenery the rest stays black	Misinterpretation of scene by CV alg.
1.128	Observer - Electronics	Part of	Exposure and shutter	Only a part of photoelectric sensor area is exposed to light		Missed detections
1.129	Observer - Electronics	Part of	Exposure and shutter	Only a part of photoelectric sensor area is exposed to light		Missing input information causes incomplete output
1.130	Observer - Electronics	Reverse	Exposure and shutter	Electronics emit light instead of receiving it	Additional l.s. creates unexpected shadows / patterns	See More l.s.
1.131	Observer - Electronics	Reverse	Exposure and shutter	Electronics emit light instead of receiving it	See More l.s.	
1.132	Observer - Electronics	Other than	Exposure and shutter	Exposure time is different than expected	Temporal coherence of frames is lost due to changing exposure	Two consecutive frames are that different that corresponding elements cannot be found any more => any tracking is confused
1.133	Observer - Electronics	Other than	Exposure and shutter	Exposure time is different than expected		Scene recognition breaks down or is at least severely hampered
1.134	Observer - Electronics	Spatial periodic	Exposure and shutter	Exposure is spatially not	Not all pixels are exposed at the	The frequency of the rolling shutter is

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
				synchronized with data readout	same time	misinterpreted as movement
1.135	Observer - Electronics	Spatial periodic	Exposure and shutter	Exposure is spatially not synchronized with data readout	Rolling shutter effect	
1.136	Observer - Electronics	Spatial aperiodic	Exposure and shutter	Exposure time of photoelectric elements is not constant	Due to the mechanical opening of shutter the time of exposure is varying	LDR to HDR based on photometric calibration fails
1.137	Observer - Electronics	Spatial aperiodic	Exposure and shutter	Exposure time of photoelectric elements is not constant	Photometric calibration differs spatially	Optical flow is inaccurate
1.138	Observer - Electronics	Spatial aperiodic	Exposure and shutter	Exposure time of photoelectric elements is not constant	The brightness constancy assumption flow is not entirely fulfilled	
1.139	Observer - Electronics	Temporal periodic	Exposure and shutter	Exposure time changes periodically	Frequent (and quick) changes between over- and underexposure	See other than
1.140	Observer - Electronics	Temporal periodic	Exposure and shutter	Exposure time changes periodically	See other than	
1.141	Observer - Electronics	Temporal aperiodic	Exposure and shutter	Continuous recording without a constant exposure time	Movements of objects appear erratic	Miscalculation of positions
1.142	Observer - Electronics	Temporal aperiodic	Exposure and shutter	Continuous recording without a constant exposure time		Miscalculation of motion
1.143	Observer - Electronics	Before	Exposure and shutter	Exposure occurred before expected time	A too early scene captured	Wrong scene interpretation if wrongly matched to expected scene phase
1.144	Observer - Electronics	Before	Exposure and shutter	Exposure starts earlier than expected	If correct exposure duration, a too early scene is captured	Wrong scene interpretation if wrongly matched to expected scene phase
1.145	Observer - Electronics	Before	Exposure and shutter	Exposure starts earlier than expected	If too long exposure duration, overexposure results	Hampered recognition due to overexposure
1.146	Observer - Electronics	After	Exposure and shutter	Exposure occurred after expected time	A too late scene captured	See Before (1)
1.147	Observer - Electronics	After	Exposure and shutter	Exposure starts later than expected	If correct exposure duration, a too late scene is captured	See Before (temp.) (2)
1.148	Observer - Electronics	After	Exposure and shutter	Exposure starts later than expected	If too long exposure duration, overexposure	

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
					results	
1.149	Observer - Electronics	In front of	Exposure and shutter	Something is in front of the detector electronics	Increased static image noise	See less Focus
1.150	Observer - Electronics	In front of	Exposure and shutter	Something is in front of the detector electronics	See less Focus	
1.151	Observer - Electronics	Behind	Exposure and shutter	Something behind detector electronics which emits	Detector receives more light than expected	Overexposure
1.152	Observer - Electronics	Behind	Exposure and shutter	Something behind detector electronics which emits	Depending on wave prop., this can lead to annihilation	Dimming or colour modification
1.153	Observer - Electronics	No (not none)	Resolution (spatial)	Sensor has no resolution	All incoming light accumulated into 1 "pixel"	De facto no detection of any object possible
1.154	Observer - Electronics	More (more of, higher)	Resolution (spatial)	The sensor resolution is higher than expected	More data to be processed than expected	If wrong image size not recognized by CV alg.: line mismatch occures (i.e. part of 1st pixel line exceeding expected width, is interpreted as begin of second line and so on)
1.155	Observer - Electronics	More (more of, higher)	Resolution (spatial)	Pixel size is smaller than expected	Usually less light sensitivity and more noise than expected	If image size correctly recognized: processing time too long
1.156	Observer - Electronics	More (more of, higher)	Resolution (spatial)	Pixel size is smaller than expected	Angular resolution is finer than expected ® more details visible	Increase error rate on scene interpretation due to higher noise rate
1.157	Observer - Electronics	More (more of, higher)	Resolution (spatial)	Pixel size is smaller than expected		CV alg. parameters have to be adapted (E.g minimal size of sliding window), otherwise functionality is lost or hampered
1.158	Observer - Electronics	Less (less of, lower)	Resolution (spatial)	The sensor resolution is lower than expected	The sensor resolution is lower than expected	Less data to be processed than expected
1.159	Observer - Electronics	Less (less of, lower)	Resolution (spatial)	Pixel size is larger than expected	Pixel size is larger than expected	Lower noise level than expected
1.160	Observer - Electronics	Less (less of, lower)	Resolution (spatial)	Pixel size is larger than expected		Angular resolution is coarser than expected
1.161	Observer - Electronics	As well as	Resolution (spatial)	Image sensor creates images of multiple	Image sensor creates images of multiple resolutions	See Other than

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
				resolutions		
1.162	Observer - Electronics	Part of	Resolution (spatial)	Only along one dimension Resol. is different from expected	Only along one dimension Resol. is different from expected	Image/pixel ratio other than expected ® image distortion
1.163	Observer - Electronics	Part of	Resolution (spatial)	Only along one dimension Resol. is different from expected		If ratio of actual to expected pixel number is simple (e.g. 1:2 or 2:1): wrong appearance can look similar to interlacing
1.164	Observer - Electronics	Part of	Resolution (spatial)	Only part of detector area is sensitive to light	Only part of detector area is sensitive to light	Not all expected parts of scene are visible in scene. E.g. if sensitive area is smaller than expected, dark area around image border results.
1.165	Observer - Electronics	Part of	Resolution (spatial)	Only part of detector area is sensitive to light		Static image noise increased.
1.166	Observer - Electronics	Part of	Resolution (spatial)	Part of pixel area is insensitive	Part of pixel area is insensitive	Noise increased
1.167	Observer - Electronics	Part of	Resolution (spatial)	Part of pixel area is insensitive		Detectable light intensity reduced
1.168	Observer - Electronics	Reverse	Resolution (spatial)	Resolution is n*m instead of m*n	Resolution is n*m instead of m*n	Size of pixel lines and columns reversed, but number of pixels per image as expected
1.169	Observer - Electronics	Reverse	Resolution (spatial)	Resolution is n*m instead of m*n		If lens properties are chosen according to expected ratio, image borders show strong aberration and occlusions
1.170	Observer - Electronics	Other than	Resolution (spatial)	Resolution is different from expected	See More/Less	See More/Less
1.171	Observer - Electronics	Other than	Resolution (spatial)	Aspect ratio differs from expected one	If resulting number of pixels is equal to expected number: see Reverse	See Reverse
1.172	Observer - Electronics	Other than	Resolution (spatial)	Aspect ratio differs from expected one	Else: see More/ Less	See More/Less
1.173	Observer - Electronics	Other than	Resolution (spatial)	Pixel ratio differs from expected	Distorted image	Object mismatch or scene misinterpretation
1.174	Observer - Electronics	Where else	Resolution (spatial)	The pixel geometry is not rectangular, e.g. hexagonal	Center of pixels not on rectangular raster, and pixel shape not rectangular	If this is not recognized: strange appearance of scene - several distortion effects
1.175	Observer -	Spatial	Resolution	Pixel size/position	Different parts of	If this is not

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
	Electronics	periodic	(spatial)	changes regularly over the view	the sensor sample the same scene area in different image area sizes	recognized, the effects correspond to those of barrel or pincushion distortion - Optics/ LGeom./More
1.176	Observer - Electronics	Spatial periodic	Resolution (spatial)	Pixel size/position changes regularly over the view		Miscalculation of sizes
1.177	Observer - Electronics	Spatial periodic	Resolution (spatial)	Pixel size/position changes regularly over the view		Miscalculation of relative relations and positions
1.178	Observer - Electronics	Spatial aperiodic	Resolution (spatial)	Pixel size changes non-uniformly (irregularly) over the view	"As special periodic, but perhaps limited to a small numbers of pixels	presumably due to production faults"
1.179	Observer - Electronics	Spatial aperiodic	Resolution (spatial)	Pixel size changes non-uniformly (irregularly) over the view		Miscalculation of relative relations and positions
1.180	Observer - Electronics	Temporal periodic	Resolution (spatial)	The resolution changes over time in a regular manner	Number of pixel lines and columns changes periodically	If this not recognized: continuously changing scene distortion
1.181	Observer - Electronics	Temporal periodic	Resolution (spatial)	The resolution changes over time in a regular manner	Limit of captured scene details changes synchronously	If this is recognized: computation time changes correspondingly, and some scene details are lost periodically
1.182	Observer - Electronics	Temporal aperiodic	Resolution (spatial)	The resolution changes over time in a spontaneous manner	Number of pixel lines and columns changes abruptly at unforeseeable points in time	If this is not recognized, effects as with More ... Reverse occur.
1.183	Observer - Electronics	Temporal aperiodic	Resolution (spatial)	The resolution changes over time in a spontaneous manner	Limit of captured scene details changes synchronously	
1.184	Observer - Electronics	Before	Resolution (spatial)	The resolution changes earlier than expected	The resolution change is expected in principle, but not at the time it actually occurs	The effects of Temporal (a)periodic occur until the expected point in time
1.185	Observer - Electronics	After	Resolution (spatial)	The resolution changes later than expected	See Before	The effects of Temporal (a)periodic occur from the expected point in time until the actual point in time
1.186	Observer - Electronics	No (not none)	Spectral efficiency	No colour response at all - sensor is completely insensitive	Black image, only thermal noise generated	No scene or objects detectable
1.187	Observer - Electronics	No (not none)	Spectral efficiency	Image is sampled in monochrome	Spectrum reduced to the intensity of a	Distinction of objects/material

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
					single frequency	based on their specific colour re-emission might fail
1.188	Observer - Electronics	More (more of, higher)	Spectral efficiency	Sensor is sensitive to more frequencies than expected	More frequencies contribute to scene impression than expected - strange or "wrong" colours	Misinterpretation of objects or their parts
1.189	Observer - Electronics	More (more of, higher)	Spectral efficiency	Sensor is sensitive to more frequencies than expected		Overexposure
1.190	Observer - Electronics	More (more of, higher)	Spectral efficiency	Image is sampled with more colour channels than expected	Image contains more colour planes than expected	Distinction of objects/material based on their specific colour re-emission might fail
1.191	Observer - Electronics	More (more of, higher)	Spectral efficiency	Image is sampled with more colour channels than expected		Too long processing time
1.192	Observer - Electronics	More (more of, higher)	Spectral efficiency	Image is sampled with more colour channels than expected		Colour planes are wrongly grouped (e.g. , processed as , , ...)
1.193	Observer - Electronics	Less (less of, lower)	Spectral efficiency	Sensor is sensitive to less frequencies than expected	More frequencies contribute to scene impression than expected - strange or "wrong" colours	Misinterpretation of objects or their parts
1.194	Observer - Electronics	Less (less of, lower)	Spectral efficiency	Sensor is sensitive to less frequencies than expected		Overexposure
1.195	Observer - Electronics	Less (less of, lower)	Spectral efficiency	Image is sampled with less colour channels than expected	Image contains fewer colour planes than expected	Distinction of objects/material based on their specific colour re-emission might fail
1.196	Observer - Electronics	Less (less of, lower)	Spectral efficiency	Image is sampled with less colour channels than expected		Complementary to 2nd More
1.197	Observer - Electronics	As well as	Spectral efficiency	In expected frequency range, sensor is less sensitive, but in other frequencies, it is more sensitive	Other frequencies contribute to scene impression than expected - strange or "wrong" colours	See More and Less
1.198	Observer - Electronics	As well as	Spectral efficiency	Optical filters and sensor colour filter interact	Colours are skewed	Distinction of objects/material based on their specific colour re-emission might fail
1.199	Observer - Electronics	As well as	Spectral efficiency	Optical filters and sensor colour filter interact	Underexposure	

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
1.200	Observer - Electronics	Part of	Spectral efficiency	Spectral Eff. has a strong break in (band-rejection filter)	Colours are skewed	Misdetections
1.201	Observer - Electronics	Part of	Spectral efficiency	Spectral Eff. has a strong break in (band-rejection filter)	Colour and Intensity are mixed	
1.202	Observer - Electronics	Reverse	Spectral efficiency	Spectral Eff. Curve is inverted	Completely wrong colour interpretation	Misdetections
1.203	Observer - Electronics	Other than	Spectral efficiency	Spec. Eff. Curve is different than expected	See More/Less/As well as	See More/Less/As well as
1.204	Observer - Electronics	Other than	Spectral efficiency	Automatically adapted Spec. Eff. (auto white balance) is erroneous	See More/Less/As well as	See More/Less/As well as
1.205	Observer - Electronics	Other than	Spectral efficiency	Image is sampled with different colour channels than expected	Wrong colour interpretation	Distinction of objects/material based on their specific colour re-emission might fail
1.206	Observer - Electronics	Where else	Spectral efficiency	Spec. Eff. changes depending on the position on detector area	Static noise is increased and influences colour intensity and hue	Misdetections
1.207	Observer - Electronics	Spatial periodic	Spectral efficiency	Spec. Eff. changes regularly over Sensor area	Different sensor areas show different response curves, but predictable	Effects of As well as merge with those of Optics
1.208	Observer - Electronics	Spatial aperiodic	Spectral efficiency	Sensitivity changes irregularly over Sensor area	Different sensor areas show different response curves, which is not or hardly predictable	Depending on strength of differences, "scattered" image hampered correct scene interpretation severely
1.209	Observer - Electronics	Temporal periodic	Spectral efficiency	Sensitivity changes regularly over time	The Sensor's response curves change over time, but in a (widely) predictable manner	Changing colour temperature hampers recognition of previously learned colours or textures, but correction is possible
1.210	Observer - Electronics	Temporal aperiodic	Spectral efficiency	Sensitivity changes irregularly over time	The Sensor's response curves change over time, but in a (widely) unpredictable manner	Changing colour temperature hampers recognition of previously learned colours or textures, if not corrected
1.211	Observer - Electronics	Before	Spectral efficiency	Colour response curve changes earlier than expected	See Meaning	Deviation of "generated" from "real" colours causes CV alg. to

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
						misinterpret scene status, e.g. point in time
1.212	Observer - Electronics	After	Spectral efficiency	Colour response curve changes later than expected	See Meaning	See Before
1.213	Observer - Electronics	No (not none)	Quality	No quality of Sensor electronics at all	Generated image data are purely random - only temporal noise	No object detected
1.214	Observer - Electronics	No (not none)	Quality	No quality of Sensor electronics at all		Noise misinterpreted, e.g. as particles in medium
1.215	Observer - Electronics	More (more of, higher)	Quality	Sensor Quality is higher than expected	Less noise, vignetting etc. than expected	CV alg. which tries to compensate Sensor faults introduce artefacts
1.216	Observer - Electronics	More (more of, higher)	Quality	Sensor Quality is higher than expected	More contrast	Clutter in scene might be interpreted as objects
1.217	Observer - Electronics	Less (less of, lower)	Quality	More (thermal) pixel noise than expected	More pixel values are randomly modified than expected	Textures wrongly interpreted
1.218	Observer - Electronics	Less (less of, lower)	Quality	More (thermal) pixel noise than expected	Pixel values are stronger randomly modified than expected	Wrong textures detected
1.219	Observer - Electronics	Less (less of, lower)	Quality	More (thermal) pixel noise than expected	Less contrast	Small image details not detected
1.220	Observer - Electronics	Less (less of, lower)	Quality	More (thermal) pixel noise than expected		Wrong small image details detected
1.221	Observer - Electronics	Less (less of, lower)	Quality	More intensity offset error than expected	Dark scene zones appear brighter than expected	Details in the dark (shadows) not detected
1.222	Observer - Electronics	Less (less of, lower)	Quality	More overflow effects than expected	E.g. blooming	Blooming effects misinterpreted as objects or object parts
1.223	Observer - Electronics	Less (less of, lower)	Quality	Image noise is stronger than any signal caused by light intensities	Image noise is prevalent	Misdetections
1.224	Observer - Electronics	Less (less of, lower)	Quality	Image noise is stronger than any signal caused by light intensities	Contrast is reduced	
1.225	Observer - Electronics	As well as	Quality	Different levels of image noise are present under different conditions	Training data image noise and image noise under test can vary	Misdetections due to "wrong" learning
1.226	Observer -	As well	Quality	Different levels of		

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
	Electronics	as		image noise are present under different conditions		
1.227	Observer - Electronics	As well as	Quality	All Less Quality effects combined	See all Less Quality	See all Less Quality
1.228	Observer - Electronics	Part of	Quality	Some Less Quality effects combined	See all Less Quality	See all Less Quality
1.229	Observer - Electronics	Other than	Quality	Image noise is different than expected	See More/Less	See More/Less
1.230	Observer - Electronics	Where else	Quality	The intensity offset error is expected to be high at a certain region of the image but is high at another region	See Meaning	Overcompensations in some and under compensations in other regions
1.231	Observer - Electronics	Spatial periodic	Quality	Sensor quality changes over its area in a regular manner	Consequences listed under Less Quality occur at different image locations with different intensities, but in a regular and widely predictive manner (with respect to variation parameters)	Hazards listed under Less Quality occur with different intensities over the image, but could principally be compensated
1.232	Observer - Electronics	Spatial periodic	Quality	Sensor quality changes over its area in a regular manner	Image noise can produce a virtual pattern	
1.233	Observer - Electronics	Spatial aperiodic	Quality	Sensor quality changes over its area in irregular manner	Like Spatial periodic, but in an irregular and hence hardly predictive manner	Hazards listed under Less Quality occur with different intensities over the image, but mitigation difficult
1.234	Observer - Electronics	Spatial aperiodic	Quality	Sensor quality changes over its area in irregular manner	Image noise can produce a virtual pattern	Image noise could be confused with objects or textures
1.235	Observer - Electronics	Temporal periodic	Quality	Sensor quality changes over time in a regular and hence predictable manner	Consequences listed under Less Quality change regularly - and hence at least conceptually predictive - over time	Hazards listed under Less Quality occur with different intensities over time, but could principally be mitigated
1.236	Observer - Electronics	Temporal aperiodic	Quality	Sensor quality changes over time in irregular manner	Consequences listed under Less Quality change irregularly - and hence even conceptually hard	Hazards listed under Less Quality occur with different intensities over time, and can hardly be mitigated

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
					to predict - over time	
1.237	Observer - Electronics	Before	Quality	Before the system is warmed up, , the image noise level is different than expected	See As well as	See As well as
1.238	Observer - Electronics	After	Quality	After the system has reached a certain age, the image noise level is different than expected	See As well as	See As well as
1.239	Observer - Electronics	After	Quality	After the system has reached a certain age, the image noise level is different than expected	Static image noise changes over the life time	Filters to remove static noise are working with reduced efficiency
1.240	Observer - Electronics	Slower	Quality	Electronics degrade very slowly	Only small changes in image noise over time	Detection of deterioration might fail as changes are so small to go unnoticed
1.241	Observer - Electronics	No (not none)	Quantization/ Sampling	No Quantisation at all	Inputs are only available in analogue form	CV alg. not able to process analogue data
1.242	Observer - Electronics	No (not none)	Quantization/ Sampling	No Quantisation at all	Or only one bit per pixel	No scene elements recognizable
1.243	Observer - Electronics	No (not none)	Quantization/ Sampling	No Quantisation at all	Or only one constant output	
1.244	Observer - Electronics	More (more of, higher)	Quantization/ Sampling	More Value Quantisation Levels than expected	Encoding of quantised data uses more bits than expected	If pixel boundaries becomes misaligned: image is completely deformed
1.245	Observer - Electronics	More (more of, higher)	Quantization/ Sampling	More Value Quantisation Levels than expected	Encoding uses a larger fraction of the possible range (e.g. 0..32767 instead of only 0..10000 with 15 bits)	"If pixel boundaries remain aligned: exceeding values not handled by CV alg. - usually, bright parts effected
1.246	Observer - Electronics	More (more of, higher)	Quantization/ Sampling	More Value Quantisation Levels than expected		- All values exceeding expected max. are mapped to "maximum white"
1.247	Observer - Electronics	More (more of, higher)	Quantization/ Sampling	More Value Quantisation Levels than expected		image brighter than correct
1.248	Observer - Electronics	More (more of, higher)	Quantization/ Sampling	More Value Quantisation Levels than expected		- All values exceeding expected max. are mapped into expected range in a round-robin manner

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
1.249	Observer - Electronics	More (more of, higher)	Quantization/ Sampling	Space Quantization is stronger than expected	See Resolution	See Resolution
1.250	Observer - Electronics	More (more of, higher)	Quantization/ Sampling	Frame rate is lower than expected	Less observations per time	Misses important observations since observed objects or their change of properties is to fast
1.251	Observer - Electronics	More (more of, higher)	Quantization/ Sampling	Frame rate is lower than expected		Different sapling rate has to be considered in dynamic models, otherwise they do not fit
1.252	Observer - Electronics	More (more of, higher)	Quantization/ Sampling	Frame rate is lower than expected		Temporal aliasing occurs
1.253	Observer - Electronics	Less (less of, lower)	Quantization/ Sampling	Value Quantisation is lower than expected	Encoding of discretised data uses fewer bits than expected	If pixel boundaries becomes misaligned: image is completely deformed
1.254	Observer - Electronics	Less (less of, lower)	Quantization/ Sampling	Value Quantisation is lower than expected	Encoding uses a fraction of the possible range (e.g. 0..10000 instead 0.. 32767 with 15 bits)	If pixel boundaries remain aligned:
1.255	Observer - Electronics	Less (less of, lower)	Quantization/ Sampling	Value Quantisation is lower than expected		image dimmer than correct
1.256	Observer - Electronics	Less (less of, lower)	Quantization/ Sampling	Value Quantisation is lower than expected		Subpixel accuracy is reduced due to less possible data values
1.257	Observer - Electronics	Less (less of, lower)	Quantization/ Sampling	Space Quantization is weaker than expected	See Resolution	See Resolution
1.258	Observer - Electronics	Less (less of, lower)	Quantization/ Sampling	Frame rate is higher than expected	More observations per time	Different sapling rate has to be considered in dynamic models, otherwise they do not fit
1.259	Observer - Electronics	As well as	Quantization/ Sampling	Multiple quantization effects (Value, space & time) interact with each other	See More/Less	See More/Less
1.260	Observer - Electronics	Part of	Quantization/ Sampling	Only Part of quantisation is performed	Some of expected dimensions not provided	Misinterpretation of available date leads to highly deformed image
1.261	Observer - Electronics	Reverse	Quantization/ Sampling	Received Intensity is encoded inverse to expected	Image is encoded as its "negative"	Scene recognition breaks down

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
1.262	Observer - Electronics	Reverse	Quantization/ Sampling	Received Intensity is encoded inverse to expected		Dips are interpreted as hills and vice versa
1.263	Observer - Electronics	Reverse	Quantization/ Sampling	Received Intensity is encoded inverse to expected		L.s. positions confused
1.264	Observer - Electronics	Other than	Quantization/ Sampling	A/D Converter introduce additional current and fake light intensity	Increased image noise	Misdetections
1.265	Observer - Electronics	Other than	Quantization/ Sampling	Value Quantisation is other than expected	Intensity output is other than expected	Colours and shadows misinterpreted, derived scene geometry has systematic deviations
1.266	Observer - Electronics	Other than	Quantization/ Sampling	Value Quantisation is other than expected	More/Less different intensity values than expected	Less details can result in missed detections
1.267	Observer - Electronics	Other than	Quantization/ Sampling	Value Quantisation is other than expected	More/Less contrast	More image noise and background clutter can result in additional false detections
1.268	Observer - Electronics	Other than	Quantization/ Sampling	Time quantization is other than expected	Speed assumptions do not fit the observations	Dynamic models have to be adapted
1.269	Observer - Electronics	Where else	Quantization/ Sampling	Different pixels quantize the same intensity with different values	"Image has scattered structure overlaid	e.g. certain pixels appear always darker than their neighbours"
1.270	Observer - Electronics	Spatial periodic	Quantization/ Sampling	Sensor pixels sample only at discreet locations thus quantizing space	Scene is sampled only at specific locations ® increase contrast (steps)	Stronger contrast misinterpreted, e.g. as shadow edges
1.271	Observer - Electronics	Spatial periodic	Quantization/ Sampling	Quantisation changes over sensor in a regular manner		
1.272	Observer - Electronics	Spatial aperiodic	Quantization/ Sampling	Quantisation changes over sensor in an irregular manner		
1.273	Observer - Electronics	Spatial aperiodic	Quantization/ Sampling	Quantisation changes over sensor in an irregular manner		
1.274	Observer - Electronics	Temporal periodic	Quantization/ Sampling	Quantisation changes in a temporally regular manner		

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
1.275	Observer - Electronics	Temporal periodic	Quantization/ Sampling	Sensor samples environment only with a certain frame rate thus quantizing time	See Exposure	See Exposure
1.276	Observer - Electronics	Temporal aperiodic	Quantization/ Sampling	Quantisation changes in a temporally irregular manner		
1.277	Algorithm	No (not none)	Parameters	(Some) Parameters not set	System uses default parameters	Default parameters don't fit current situation
1.278	Algorithm	More (more of, higher)	Parameters	Parameter value is too high	Threshold is too high	Functionality hampered
1.279	Algorithm	More (more of, higher)	Parameters	Parameter value is too high	Window too big to for target frequency in data	
1.280	Algorithm	Less (less of, lower)	Parameters	Parameter value is too low	See More	See More
1.281	Algorithm	As well as	Parameters	One parameter is too low the other too high	See More and Less	See More and Less
1.282	Algorithm	Part of	Parameters	Some Parameters are not set	See No	See No
1.283	Algorithm	Reverse	Parameters	Parameters are input in reverse	See Where else	See Where else
1.284	Algorithm	Other than	Parameters	Parameter is provided in units differently from expected	Misinterpretations or scale of inputs is wrong	Incorrect model
1.285	Algorithm	Other than	Parameters	Parameter is provided in units differently from expected		Incorrect action planning
1.286	Algorithm	Other than	Parameters	Parameter does not fit the reality	Deviation of the systems view of reality from the real world	The system fails or presents erroneous data
1.287	Algorithm	Where else	Parameters	The value for one parameter is confused with another	Parameters are confused (wrong values assigned)	Functionality nullified
1.288	Algorithm	Temporal periodic	Parameters	Parameter is oscillating	No stable parameter set	Unreliable result
1.289	Algorithm	Temporal periodic	Parameters	Parameter is oscillating	No stable result	
1.290	Algorithm	Temporal aperiodic	Parameters	Parameter is stochastically changed	See Temporal periodic	See Temporal periodic
1.291	Algorithm	Before	Parameters	Initialization is done in the wrong order	Temporal dependencies are ignored	Functionality hampered
1.292	Algorithm	Before	Parameters	Initialization is done in the wrong		Deadlocks

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
				order		
1.293	Algorithm	Before	Parameters	Initialization is done in the wrong order		Racing Conditions
1.294	Algorithm	Before	Parameters	Initialization is done in the wrong order		Result are used although they are not yet valid
1.295	Algorithm	Before	Parameters	Parameter change occurs before expected	System misinterprets situation	Functionality hampered
1.296	Algorithm	After	Parameters	See Before	See Before	See Before
1.297	Algorithm	No (not none)	History	History is not available	History is not available	History is empty
1.298	Algorithm	No (not none)	History	No history is used at all	No history is used at all	See Meaning
1.299	Algorithm	No (not none)	History	No history is used at all		
1.300	Algorithm	More (more of, higher)	History	History size/time span is too long	History size/time span is too long	Calculation time higher
1.301	Algorithm	More (more of, higher)	History	History size/time span is too long		Low pass filter effect
1.302	Algorithm	More (more of, higher)	History	History size/time span is too long		Increased Smoothing
1.303	Algorithm	More (more of, higher)	History	History size/time span is too long		Historical data are weighted more than current inputs
1.304	Algorithm	More (more of, higher)	History	History size/time span is too long		Important details are drowned in a sea of unimportant data
1.305	Algorithm	Less (less of, lower)	History	History is not yet complete	History is not yet complete	Initialization is not yet completed
1.306	Algorithm	Less (less of, lower)	History	History is not yet complete		Algorithm must first sample inputs for some time to create a history or default assumptions about the history are needed
1.307	Algorithm	Less (less of, lower)	History	History is not yet complete		"Algorithm might use old history (e.g. from last run)
1.308	Algorithm	Less (less of, lower)	History	History size/time span is too short	History size/time span is too short	Calculation time shorter
1.309	Algorithm	Less (less of, lower)	History	History size/time span is too short		High pass filter effect
1.310	Algorithm	Less (less of, lower)	History	History size/time span is too short		Decreased Smoothing
1.311	Algorithm	Less	History	History size/time		Historical data are

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
		(less of, lower)		span is too short		weighted less than appropriate
1.312	Algorithm	As well as	History	For some aspects, too much history is used, while for others too little	Historical data is applied inappropriately	Scene is partially misinterpreted
1.313	Algorithm	Part of	History	History is only partially complete	See Less	See Less
1.314	Algorithm	Part of	History	History is only partially complete	See Temporal aperiodic	See Temporal aperiodic
1.315	Algorithm	Reverse	History	History time is inversed	Old entries appear as new and vice versa	Confusion of events and causality can create erratic system behaviour
1.316	Algorithm	Other than	History	History from a different time span than expected, is used	Results are based on out-dated history	Functionality hampered
1.317	Algorithm	Other than	History	History from a different time span than expected, is used	Wrong events are correlated	Results incorrect
1.318	Algorithm	Other than	History	History from a different time span than expected, is used		Miscalculations of timings and movements
1.319	Algorithm	Where else	History	History from a different location is used	Wrong events are correlated	Miscalculations of location and tracking
1.320	Algorithm	Spatial periodic	History	Spatial structures are sampled and turned into history data	Missed frames change interpretation of spatial structure	Miscounts
1.321	Algorithm	Spatial periodic	History	Spatial structures are sampled and turned into history data		Misinterpretation of spatial periodicals
1.322	Algorithm	Spatial aperiodic	History	See Realtime	History is rebuild for every n frames	Synchronized phenomena are differently interpreted in a periodic manner
1.323	Algorithm	Temporal periodic	History	History is periodically reset	Information of some frames is missing	CV alg. Does not detect the missing of a frame(s) and crashes
1.324	Algorithm	Temporal periodic	History	History is periodically reset		Missing information is interpolated in a wrong way
1.325	Algorithm	Temporal aperiodic	History	Some frames in history are missing	Errors in spatial differences between history data points is increasing	Incorrect results
1.326	Algorithm	Temporal aperiodic	History	Some frames in history are missing		Incomplete results

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
1.327	Algorithm	Close	History	History data points are spatially incorrect	Errors in spatial differences	See Close
1.328	Algorithm	Close	History	History data points are spatially incorrect		
1.329	Algorithm	Before	History	Phase shift in frame sequence capture (too early)	History is phase shifted	Results arrive too early
1.330	Algorithm	Before	History	Phase shift in frame sequence capture (too early)		Synchronisation to other systems is lost
1.331	Algorithm	After	History	Newest history includes an extreme event	History is weighted strongly and the influence of the extreme event is significant	Results outside of specifications
1.332	Algorithm	After	History	Newest history includes an extreme event	History spikes	Incorrect Results
1.333	Algorithm	Faster	History	History time base is misinterpreted (too fast)	Dynamics and Movement calculation error increased	Miscalculation of dynamics and movements
1.334	Algorithm	No (not none)	Models	No Models available	Default results can be reported	Incorrect results
1.335	Algorithm	No (not none)	Models	No Models available	Recognition of appl.-typical objects and situations not trained	Everything reported as unknown
1.336	Algorithm	No (not none)	Models	No Models available		Distinction between uncritical and critical situations hampered
1.337	Algorithm	No (not none)	Models	No Models available		Detection of typical objects and situations not more efficient than of others
1.338	Algorithm	More (more of, higher)	Models	More Models available than expected	Runtime higher	Results arrive too late
1.339	Algorithm	More (more of, higher)	Models	More Models available than expected	Model domain does not fit environment	Mismatches
1.340	Algorithm	More (more of, higher)	Models	More Models available than expected		False positives (too many classes in the classifiers)
1.341	Algorithm	More (more of, higher)	Models	More Models available than expected		False negatives: No critical scenes detected, because "everything" is learned as normal
1.342	Algorithm	More (more of, higher)	Models	Modelling extent too large or over specific	Algorithm is very pedantic	Matching will not work as no patch exactly matches the very specific model

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
1.343	Algorithm	More (more of, higher)	Models	Modelling extent too large or over specific	Noise effects are enhanced	Classifier has too sharp peaks
1.344	Algorithm	More (more of, higher)	Models	Modelling extent too large or over specific		Noise confused with signal
1.345	Algorithm	Less (less of, lower)	Models	Modelling extent too small or too generic	Large range of hypotheses is assigned to a small number of results	More false positives
1.346	Algorithm	Less (less of, lower)	Models	Number of models too few	Small range of hypotheses is covered	More false negatives
1.347	Algorithm	As well as	Models	Redundancy in models	Hypotheses are separated although they should match to the same model	Ambiguous results
1.348	Algorithm	As well as	Models	Redundancy in models	Total selectivity of system reduced	Misdetections
1.349	Algorithm	As well as	Models	Redundancy in models	Likelihoods are washed out instead of peaked	Tracking errors (consistency between frames lost)
1.350	Algorithm	Part of	Models	Models are incomplete	System uses incomplete model data	Misinterpretation
1.351	Algorithm	Part of	Models	Models are incomplete	Some parts of the model are correct, but others are missed	Wrong defaults are used to fill out missing information
1.352	Algorithm	Part of	Models	Models are incomplete	Model misses essential aspects or situations	False negatives
1.353	Algorithm	Part of	Models	Models are incomplete	Trained model is not covering enough variants of a task	
1.354	Algorithm	Part of	Models	Dynamical models are incomplete	Calculations are missing inputs from models	Tracking fails
1.355	Algorithm	Reverse	Models	Training data are opposite to those occurring during appl.	"Good" cases trained as "bad" and vice versa	Continuous wrong scene interpretation
1.356	Algorithm	Other than	Models	Inadequate model assumptions	Applicability of model to given problem is reduced	Performance is negatively affected
1.357	Algorithm	Other than	Models	Inadequate model assumptions	Missing regularisation	More false positives / false negatives
1.358	Algorithm	Other than	Models	Inconsistent models are supplied	See Part of	CV Algorithm is confused by inconsistent model -> infinite loop
1.359	Algorithm	Other than	Models	Inconsistent models are	Specified objects are physically	

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
				supplied	impossible	
1.360	Algorithm	Other than	Models	Units or reference systems are other than expected	Scaling of model is different from expected	Result has wrong units/scale
1.361	Algorithm	Other than	Models	Units or reference systems are other than expected	Orientation of objects can differ from the expected	Miscalculation of distances
1.362	Algorithm	Other than	Models	Units or reference systems are other than expected	Specified objects are physically impossible	Misinterpretation of relations
1.363	Algorithm	Other than	Models	Wrong probabilities used	Confidences are incorrect	Results incorrect
1.364	Algorithm	Other than	Models	Wrong probabilities used	Relations between objects are changed	
1.365	Algorithm	Other than	Models	The training data is erroneous (label noise)	The resulting model is inaccurate	Results are erroneous or ambiguous
1.366	Algorithm	Other than	Models	Global model is used instead of local model and vice versa.	A global algorithm is applied and fails due to the occurrence of local phenomena, and vice versa.	Foreground/ background segmentation fails because it is using a single threshold for the whole image (global illumination model), whereas a local model (adaptive threshold) which deals with local illumination changes succeeds.
1.367	Algorithm	Other than	Models	Global model is used instead of local model and vice versa.		
1.368	Algorithm	Spatial periodic	Models	Model includes a spatial periodicity	Algorithm expects same periodicity in scene as in model	Failed detection caused by small deviation in periodicity in current scene compared to periodicity of model
1.369	Algorithm	Spatial aperiodic	Models	Event is physically inconsistent in regard of general assumptions	Algorithm interprets physically inconsistent input as real	Algorithm is confused by physical inconsistency
1.370	Algorithm	Temporal periodic	Models	Model includes a temporal periodicity	Algorithm expects same periodicity in scene as in model	See Other than
1.371	Algorithm	Temporal periodic	Models	Model includes a temporal periodicity	See Other than	
1.372	Algorithm	Temporal periodic	Models	Model includes temporal periodicity instead of ignoring it	Algorithm expects parts of scene to be static	Misdetections
1.373	Algorithm	Temporal periodic	Models	Model includes temporal	Algorithm expects special	False negatives

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
				periodicity instead of ignoring it	configuration of object	
1.374	Algorithm	Temporal aperiodic	Models	Model captures singular event as typical	General cases are not supported	Misclassifications
1.375	Algorithm	Close	Models	Assumptions about ranges in model violated	Scaling is different from expected	Classifications fail
1.376	Algorithm	Close	Models	Assumptions about ranges in model violated		Measurements incorrect
1.377	Algorithm	Close	Models	Two Modes are that close (in parameter space) that they are hard to distinguish	Confusion between the two modes	Mode based classification severely hampered
1.378	Algorithm	Before	Models	Model building/ Training stopped to early	Only part of relevant situations learned	Unlearned situations are more likely misinterpreted
1.379	Algorithm	After	Models	Model includes assumptions about temporal sequences	Algorithm expects temporal sequence in input data	Waiting infinitely for events
1.380	Algorithm	After	Models	Training occurs while in operation	Continuous learning	Critical situations occurring repeatedly during operation eventually are considered as normal
1.381	Algorithm	After	Models	Model building/ Training started too late	Operational phase started too late	Early critical situations missed
1.382	Algorithm	Faster	Models	Model time scale different from expected	Algorithm expects a different time scale	Tracking fails
1.383	Algorithm	Faster	Models	Model time scale different from expected		Matching fails
1.384	Algorithm	Slower	Models	See Faster	Training phase takes too long	Operation is started too late and misses critical situations
1.385	Algorithm	Slower	Models	Training occurs slower than expected	See Less	See Less
1.386	Algorithm	No (not none)	Calibration	No calibration is used	Redundant parameter has no meaningful value	Positions incorrect
1.387	Algorithm	No (not none)	Calibration	No calibration is used	Calibration converges slowly or against a local minimum	Calibration does not converge
1.388	Algorithm	More (more of, higher)	Calibration	Calibration has more parameters than can be estimated	Scene geometry not known to scene interpreter	Scene geometry wrongly interpreted ® wrong distances and sizes derived
1.389	Algorithm	More	Calibration	Calibration has	Distortion effects	Objects appear

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
		(more of, higher)		more parameters than can be estimated	are not compensated	differently depending on their position within the image -> misdetections
1.390	Algorithm	More (more of, higher)	Calibration	Calibration has more parameters than can be estimated	Epipolar constraints not applying	
1.391	Algorithm	Less (less of, lower)	Calibration	Calibration has not enough parameters	Algorithm uses defaults /fixed compensations	Robustness reduced
1.392	Algorithm	Less (less of, lower)	Calibration	Calibration has not enough parameters		Functionality hampered
1.393	Algorithm	Less (less of, lower)	Calibration	Calibration is based on too few data points	Quality of calibration is reduced	See No
1.394	Algorithm	As well as	Calibration	Different calibration methods are combined into one calibration set	Sequence of calibration methods influences calibration outcome	See Other than
1.395	Algorithm	Reverse	Calibration	Scene Geometry reversed	Negative scaling factor is used	Near objects are interpreted as far away and reverse.
1.396	Algorithm	Other than	Calibration	Calibration other than expected is used	Calibration is inappropriate	Calibration faulty
1.397	Algorithm	Other than	Calibration	Calibration other than expected is used		Results hampered
1.398	Algorithm	Other than	Calibration	Calibration other than expected is used		Scene misinterpreted
1.399	Algorithm	Where else	Calibration	Calibration applies to different environment than expected	Calibration doesn't match current scene	See Other than
1.400	Algorithm	Where else	Calibration	Calibration applies to different environment than expected		
1.401	Algorithm	Spatial periodic	Calibration	Error in correspondence of period in periodic calibration pattern (e.g. checkerboard)	Wrong calibration result e.g. for extrinsic calibration	Range errors in creation of world model
1.402	Algorithm	Spatial periodic	Calibration	Error in correspondence of period in periodic calibration pattern		Range error in perception of objects

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
				(e.g. checkerboard)		
1.403	Algorithm	Spatial periodic	Calibration	The calibration pattern is presented at too regular positions	Not enough data to get a valid calibration for a large operation volume	Bad results at other places than considered in the calibration
1.404	Algorithm	Spatial aperiodic	Calibration	The calibration patterns used violate an assumption about periodicity	Too much noise in the calibration data, wrong calibration result	Bad recognition results for classification and localization
1.405	Algorithm	Temporal periodic	Calibration	The stimuli to calibrate the latency are periodic and there is a period mismatch	The parameter for the latency is set to a wrong value	Visual servoing doesn't work well
1.406	Algorithm	Temporal aperiodic	Calibration	The clock for the cameras has some systematic jitter which should have been calibrated but hasn"t	Asynchronous stereo images mismatch	Position errors in the images and hence distance errors from stereo
1.407	Algorithm	Close	Calibration	If an assumption about distance is part of the calibration measurement, the calibration object may be closer than modeled	The focal length is under-estimated	Distance and object size measurements are wrong
1.408	Algorithm	Close	Calibration	If an assumption about distance is part of the calibration measurement, the calibration object may be closer than modeled	The stereo-base is under-estimated	
1.409	Algorithm	Remote	Calibration	See Close		
1.410	Algorithm	Before	Calibration	There may be a suitable order of steps for calibration, e.g. intrinsic first, then extrinsic, then latency, This may be mixed up	Arrive at wrong local minimum	See In front of
1.411	Algorithm	Before	Calibration	There may be a suitable order of steps for calibration, e.g. intrinsic first, then extrinsic, then latency, This may be mixed up	Get fundamental matrix and intrinsic camera parameters wrong	

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
1.412	Algorithm	Before	Calibration	A trigger comes earlier than modeled	See temporal periodic and temporal aperiodic	See temporal periodic and temporal aperiodic
1.413	Algorithm	In front of	Calibration	Some objects are in front of the calibration object (or some distorting media)	Noisy or missing calibration data, maybe even with systematic error	Bad image rectification leads to shape errors, poor feature extraction, bad stereo correspondences etc.
1.414	Algorithm	In front of	Calibration	Some objects are in front of the calibration object (or some distorting media)	Poor calibration results	
1.415	Algorithm	Behind	Calibration	Calibration object in front of a background parts of which could be mistaken for calibration relevant	Extra (wrong) calibration input	See In front of
1.416	Algorithm	Behind	Calibration	Calibration object in front of a background parts of which could be mistaken for calibration relevant	Poor calibration results	
1.417	Algorithm	Behind	Calibration	Segmentation of calibration object from background may be poor	Comparing velocities in image and world yields wrong calibration results	See close
1.418	Algorithm	Faster	Calibration	If motion models should be used for calibration, the real velocity could be faster than the modeled velocity	Computation completed too late or is pre-terminated	Scene geometry misinterpreted
1.419	Algorithm	Slower	Calibration	See faster	The software does not derive recent results	Either no results are available or invalid old results are used
1.420	Algorithm	Slower	Calibration	See faster		
1.421	Algorithm	Slower	Calibration	See faster		
1.422	Algorithm	Slower	Calibration	Calibration takes more time than appropriate	The processes seem to be slower than they are	Visual servoing fails
1.423	Algorithm	Slower	Calibration	Calibration takes more time than appropriate		Velocity based classification fails
1.424	Algorithm	More (more of, higher)	Real-time Performance	Some processing is much faster than expected	If the process gets its data from some stack, it might overtake the other processes and the data become inconsistent	Inconsistent data may lead to completely wrong results

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
1.425	Algorithm	Less (less of, lower)	Real-time Performance	In case of parallel processing some processing may take longer than expected	Dependent processes get no results or old results	Subsequent processes might crash due to lack of valid input or might produce wrong results because of using old, invalid input
1.426	Algorithm	As well as	Real-time Performance	Processes might be applied to more data than actually required (e.g. if downstream a sub-sampling to every n-th image is made, there is no need to process every raw image)	The available resources (computation power, memory communication bandwidth) are wasted	There are not enough resources to do other important things
1.427	Algorithm	Part of	Real-time Performance	There are spurious delays, i.e. generally the performance is OK, and then occasionally one result is too late	See less, only that it happens infrequently and spuriously	See Less
1.428	Algorithm	Reverse	Real-time Performance	In order to ensure performance fixed limits on the data to be processed are given (e.g. the number of features)	The limits are worst case for each process, so the overall limitation is too strong	Poor performance
1.429	Algorithm	Other than	Real-time Performance	The processor doesn"t have a math coprocessor so there are many function calls and the software runs a lot slower	See Slower	See Slower
1.430	Algorithm	Where else	Real-time Performance	Closely interacting processes are assigned to units that are too far spread out	Long latencies	Poor performance
1.431	Algorithm	Temporal periodic	Real-time Performance	A subprocess might be started periodically based on some clock but then be out of sync with the input data	No input data available	Wrong results
1.432	Algorithm	Temporal periodic	Real-time Performance	A subprocess might be started periodically based on some clock but then be out of sync with the input data	Old input data reused	

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
1.433	Algorithm	Temporal periodic	Real-time Performance	A subprocess might be started periodically based on some clock but then be out of sync with the input data	Input data are lost	
1.434	Algorithm	Temporal aperiodic	Real-time Performance	A subprocess might be used to trigger other processes but spuriously fails to deliver the trigger	The waiting subprocess doesn't start	System stalls or some results are missing
1.435	Algorithm	Before	Real-time Performance	Between temporally ordered subprocesses (e.g. a predictor - corrector algorithm or an expectation - maximization algorithm) the processes get out of order	Process operates on old data or data are missing	Wrong results out, or no results, or subsequent process crashes
1.436	Algorithm	Before	Real-time Performance	One might use an estimated processing time or latency of a hardware driver to assign a time stamp for data that do not come from a subsystem with a proprietary, synchronized clock	The estimated time might be wrong	Wrong time stamps lead to wrong positions, orientations, velocities etc.
1.437	Algorithm	Before	Real-time Performance	One might use an estimated processing time or latency of a hardware driver to assign a time stamp for data that do not come from a subsystem with a proprietary, synchronized clock	The time might vary a lot between calls to the driver (in that case see spatial aperiodic)	Also wrong data associations might result
1.438	Algorithm	Faster	Real-time Performance	The process is faster than expected so that it uses old input data repeatedly instead of once	Overestimate importance of the data	Wrong results
1.439	Algorithm	Slower	Real-time Performance	The software (or function) needs a lot more time to perform than expected	The results are not available in time	The entire system might halt, or might produce bad results due to missing data

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
1.440	Algorithm	Slower	Real-time Performance	The software (or function) needs a lot more time to perform than expected	If the rest of the system just keeps running it is as well as missing results	
1.441	Algorithm	No (not none)	Runtime-Environment	The system does not run, some subsystem does not run, or some threads do not run	Results missing	The entire perception result or some parts of the expected perception result are not present, or they are not as good as one might expect (e..g. missing measurements may degrade a filter, but not throw it off completely)
1.442	Algorithm	No (not none)	Runtime-Environment	The system does not run, some subsystem does not run, or some threads do not run		
1.443	Algorithm	No (not none)	Runtime-Environment	The system does not run, some subsystem does not run, or some threads do not run		
1.444	Algorithm	More (more of, higher)	Runtime-Environment	More threads are running than needed, or threads not belonging to the perception system steal the performance	The intended process performance is not reached	Too few results, results are not in time
1.445	Algorithm	Less (less of, lower)	Runtime-Environment	Some subsystem does not run or some threads do not run	Results missing	Some parts of the expected perception result are not present, or they are not as good as one might expect (e.g. missing measurements may degrade a filter, but not throw it off completely)
1.446	Algorithm	As well as	Runtime-Environment	The same or competing results are obtained by two instances of a process	Certainties are over-estimated	Wrong perception result
1.447	Algorithm	As well as	Runtime-Environment	The same or competing results are obtained by two instances of a process		Maybe results are accepted that should have been discarded
1.448	Algorithm	Part of	Runtime-Environment	Serialized data are split at the wrong time	E.g. if there is a serialized analogue TV signal, wrong	The image is useless

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
					time base leads to a beam in the middle and part old, part new images	
1.449	Algorithm	Part of	Runtime-Environment	Some bits or sectors in the memory are corrupted	Data are wrong	The result is invalid, or the certainty of the result is over-estimated
1.450	Algorithm	Part of	Runtime-Environment	Some bits or sectors in the memory are corrupted	More noise	
1.451	Algorithm	Part of	Runtime-Environment	Some bits or sectors in the memory are corrupted	Control flow may crash	
1.452	Algorithm	Reverse	Runtime-Environment	Instead of being started or of getting high priority, a process is stopped or gets low priority	No results available	No valid results or a stream of results with where many instances are missing or are wrong
1.453	Algorithm	Reverse	Runtime-Environment	Instead of being started or of getting high priority, a process is stopped or gets low priority	Timing is other than expected, fewer results as needed	
1.454	Algorithm	Other than	Runtime-Environment	A process is assigned to the wrong hardware module, e.g. a calculation is assigned not to the GPU but a general purpose CPU	The hardware might still do the calculation but be much slower, at the expense of other processes	Performance degradation
1.455	Algorithm	Other than	Runtime-Environment	A process is assigned to the wrong hardware module, e.g. a calculation is assigned not to the GPU but a general purpose CPU		Or no results at all depending on the robustness w.r.t. assignment of processor
1.456	Algorithm	Other than	Runtime-Environment	A different version of a process is started than the intended version, caused by naming error or version error or wrong path	The interpretation of results might be wrong	Wrong perception results
1.457	Algorithm	Other than	Runtime-Environment	A different version of a process is started than the intended version, caused by naming	The data are incompatible	

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
				error or version error or wrong path		
1.458	Algorithm	Other than	Runtime-Environment	A different version of a process is started than the intended version, caused by naming error or version error or wrong path	The timing is different than intended	
1.459	Algorithm	Where else	Runtime-Environment	Assign a process to a processor that is farther away than expected and has more communication latency	See After	See After
1.460	Algorithm	Temporal periodic	Runtime-Environment	Wrong trigger times	Subsystems get out of sync, bad data association	Wrong perception results, wrong estimation of distances or velocities
1.461	Algorithm	Temporal aperiodic	Runtime-Environment	Poor signal quality on the clock	Clock ticks are spuriously lost	Old data are used instead of new ones,
1.462	Algorithm	Temporal aperiodic	Runtime-Environment	Poor signal quality on the clock		Bad data association
1.463	Algorithm	Close	Runtime-Environment	Maybe the designer has assigned signal latencies based on distance, resp. spatial length of communication channel, and if the channel is a lot shorter the timing is different than expected	See Before	See Before
1.464	Algorithm	Remote	Runtime-Environment	A system may be far off so that significant delays are introduced due to communication time	See After (2)	See After (2)
1.465	Algorithm	Before	Runtime-Environment	There is a race in the signals, e.g. confusing the order of reset and calculation	A result is calculated on a wrongly assumed previous state (expected result of reset) and then deleted by the reset	No results, or wrong results
1.466	Algorithm	Before	Runtime-Environment	The results of a subsystem arrive earlier than modeled	The time stamps assigned to events are wrong resp. inconsistent	When creating models in motion, the places and angles are wrong

Risk Id	Location	Guide Word	Parameter	Meaning	Consequence	Risk
1.467	Algorithm	After	Runtime-Environment	The results of a subsystem arrive later than modeled	The time stamps assigned to events are wrong resp. inconsistent	When creating models in motion, the places and angles are wrong
1.468	Algorithm	Faster	Runtime-Environment	One subsystem runs faster than expected	It is out of synch with the other subsystems	Result are wrong
1.469	Algorithm	Faster	Runtime-Environment	One subsystem runs faster than expected	Wrong data correspondence	