12.3" front camera requirements:

Generell Assumption:
- The CVI will receive external trigger signals to identify which camera input shall be displayed.
- The CVI shall implement a logic to view or hide the camera streams based on the external trigger signals and internal HMI triggers.
- The MMTP3 safety requirements are valid for all camera inputs. The costs for the additional safety requirements shall be listed separately.
- All valid requirements for 7" display regarding functional behavior, architecture and diagnosis shall be valid for 12.3" display.

SW Requirements:
- It shall be possible to display up to two different video streams in parallel. (Already accepted by Harman in Req. 2014.14985)
- It shall be possible to activate different cameras and show their corresponding stream with terminal 15 off via network management. (Already accepted by Harman in Req. 2014.14985, 2014.15020)
- It shall be possible to display HMI overlay on video stream (e.g. buttons for switching between different camera views or enlarge the size of a camera view) (Already accepted by Harman in Req. 2013.03661 & 2014.14993)
- New Req: It shall be possible to configure if the video stream is shown horizontal-inverted or/and vertical-inverted by EOL parameter.
- Notifications shall not overlay the legal viewing range. (Already accepted by Harman in Req. 2014.14993)

KPI-Requirement:
- The camera stream(s) shall be displayed 2s after detection of a camera trigger beginning from start-up phase. (Already accepted by Harman in Req. 2014.15021)

Safety requirements (ASIL A):
- The video stream of the front camera shall be clearly assignable to the front camera by driver. (E.G. By a HMI overlay and/or explicit position of the camera stream).
- The video stream of the back camera shall be clearly assignable to the back camera by driver. (E.G. By a HMI overlay and/or explicit position of the camera stream).
- It must be recognized by the driver if the wrong camera is displayed (E.G. By a black screen or pop-up).
- The mechanism to provide the assignment shall be adjustable by MAN. (E.G. Different HMI overlays shall be assigned to different camera inputs by EOL parameters. E.G. Overlay of Camera 1 or 2 shall be assigned to text or symbol for front camera, back camera, door camera, etc.).

41 Already accepted Requirements from Harman in MMTP3/CVI Specification:
42 - 2014.14985: It must be possible to process video signals from at least two video sources in
43 parallel in a video sink, e.g. 2 different camera systems.
44 - 2014.15020: The video management system must always be available with terminal 15 on for
45 driver assistance systems, entertainment video and diagnostic and must be available after
46 wake-up in the case of terminal 15 off.
47 - 2014.14993: It must be possible for MAN to parameterise overlay sources and content for any
48 source-sink combination via EOL.
49 - 2014.15021: The video management system must be fully available after the first 2 seconds in
50 the start-up phase.
51 - 2013.03661:It must be possible to apply an overlay on the video image display.
52 - 2014.14993: It must be possible for MAN to parameterise overlay sources and content for any
53 source-sink combination via EOL. e.g. for display of the navigation map with overlay sources
54 on the driver display and navigation map without overlay sources on the passenger screen.
55
56 Negative Requirements. Not needed any more by MAN
57 - No need to implement a camera logic related to speed threshold, reverse gear information,
58 TriggerPin and parking brake status.
59 - No need to develop parameters to control the camera logic related to speed threshold, reverse
60 gear information, TriggerPin and parking brake status.
61
62 - 2015.03350: The following signals must be read in. Speed, reverse gear status, parking brake
63 status, TriggerPin status.
64 - 2015.03351: It must be possible for MAN to configure the following activation conditions per
65 source via EOL: speed threshold, reverse gear information, TriggerPin, parking brake status.
66 - 2015.03352: It must be possible for MAN to configure the following deactivation conditions per
67 source via EOL: speed threshold, reverse gear information, TriggerPin, parking brake status