Overview of draft NPs on
Wrap around view drive monitor system –
Part 1: Method for generating the surround visual image

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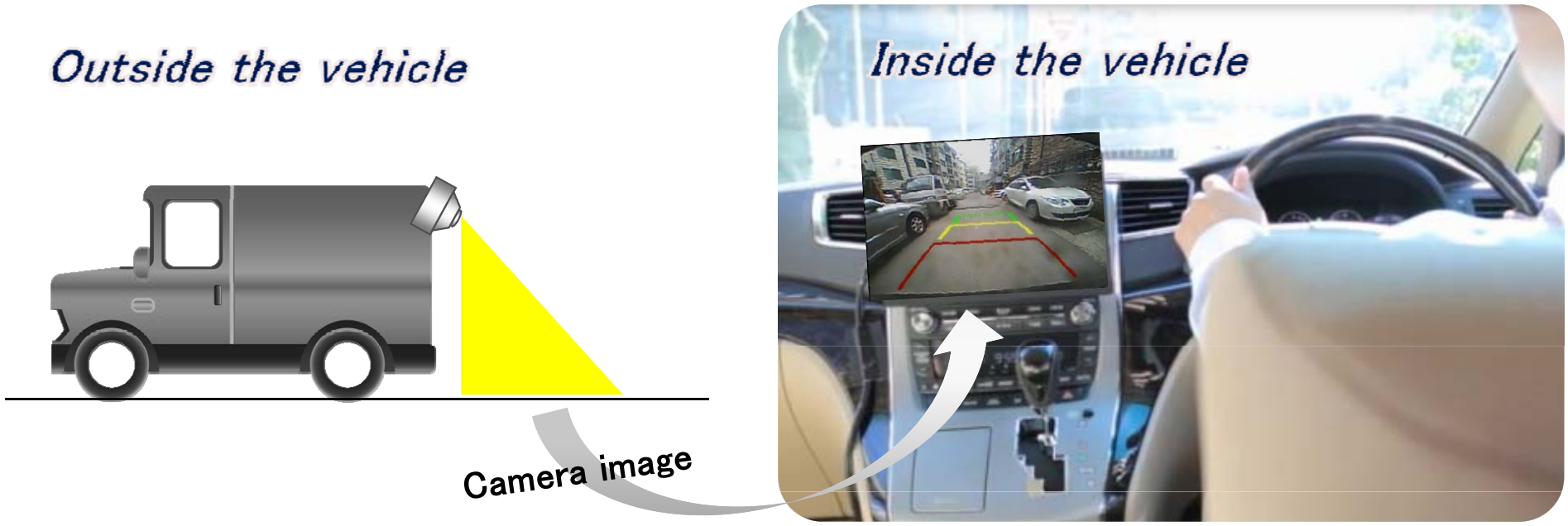
Background *–Driver assistance system with cameras–*

–Recently driver assistance system with vehicle–mounted cameras has been increasing. This system enables drivers to see outside the vehicle and helps to improve driver safety.

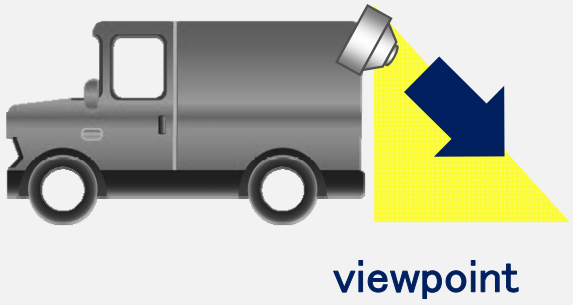


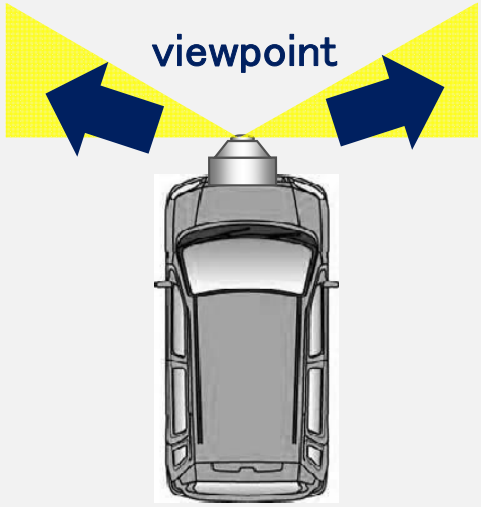
–Not only passenger car, but also commercial vehicles such as trucks, buses, and special vehicles such as construction, agricultural machineries also tend to install this kind of camera system gradually. These huge and unique–shaped vehicles have many blind spots and required the assistance systems of accidents prevention.

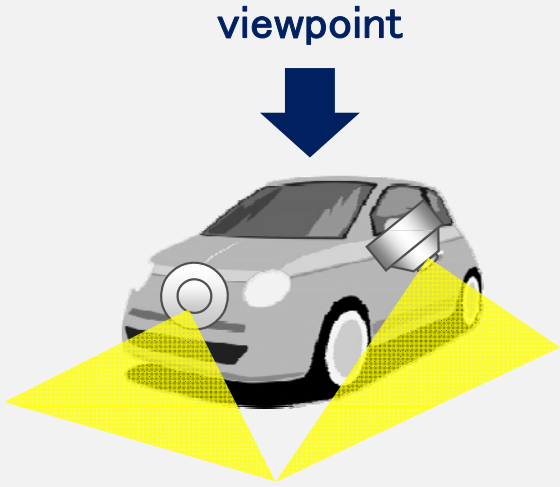
Background *–Representative camera systems–*

–Rearview monitor, *Blind corner monitor* and *Bird's-eye view camera system* are representative driver assistance camera systems.

These camera systems are limited field of view to be displayed. The respective system has one fixed viewpoint and specialized only in specific viewable area in any occasion. If we want to see another area, we need to get different camera system that specialized in the area we're going to see the next. According to which part we'd like to see, we choose the best camera system.







Purpose

Wrap around view drive monitor system enables drivers to see vehicle's surroundings instantly from various perspective depending on driving situation with using "free eye point" technology. Each view looks as if filmed from outside the vehicles.

New work item Proposal

Title:

Wrap around view drive monitor system –
Part 1: Method for generating the surround visual image

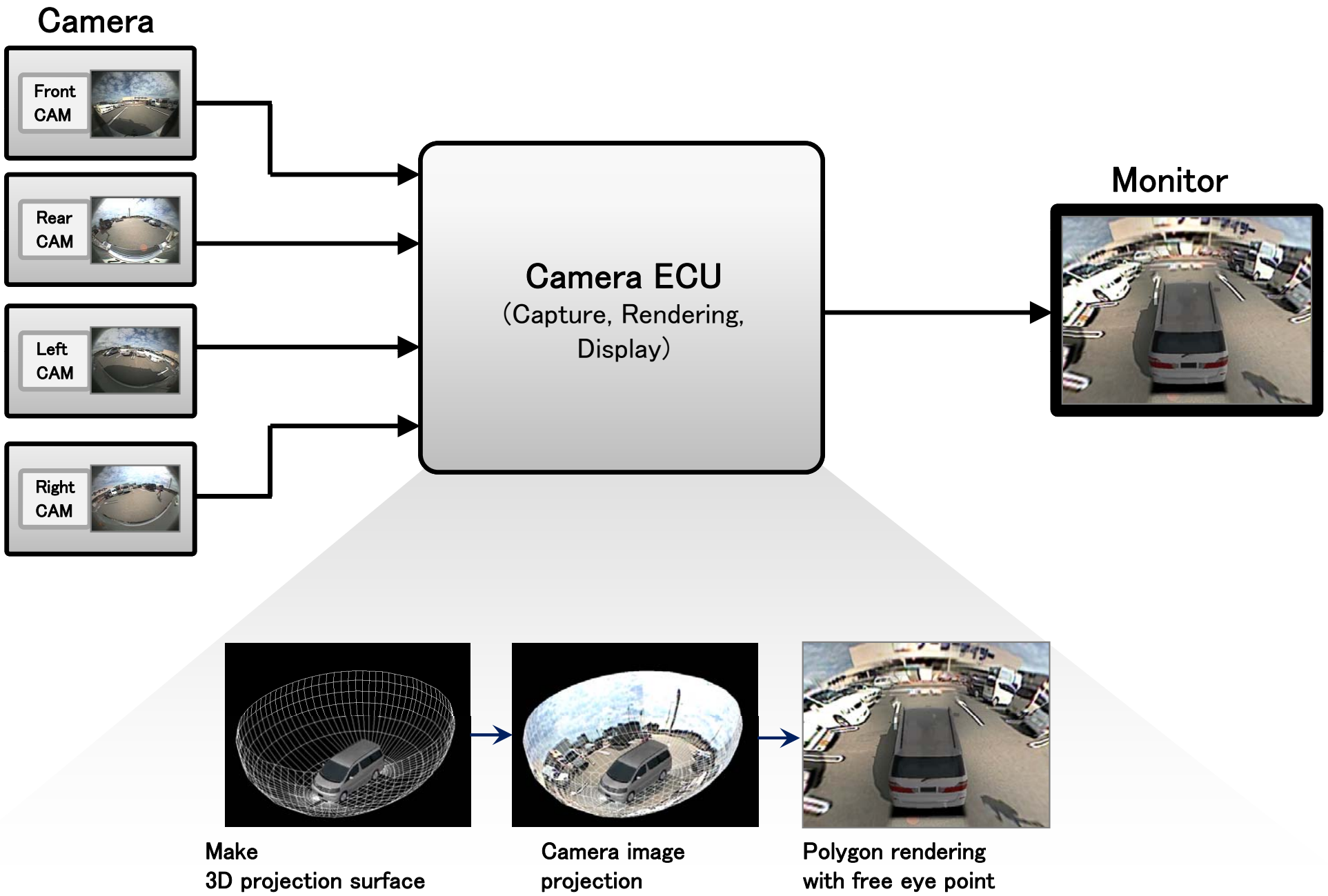
Scope:

This International Standard specifies the method for generating the surrounding visual image of the wrap around view drive monitor system which provides vehicle users a surrounding visual image of their vehicle.

NP submission:

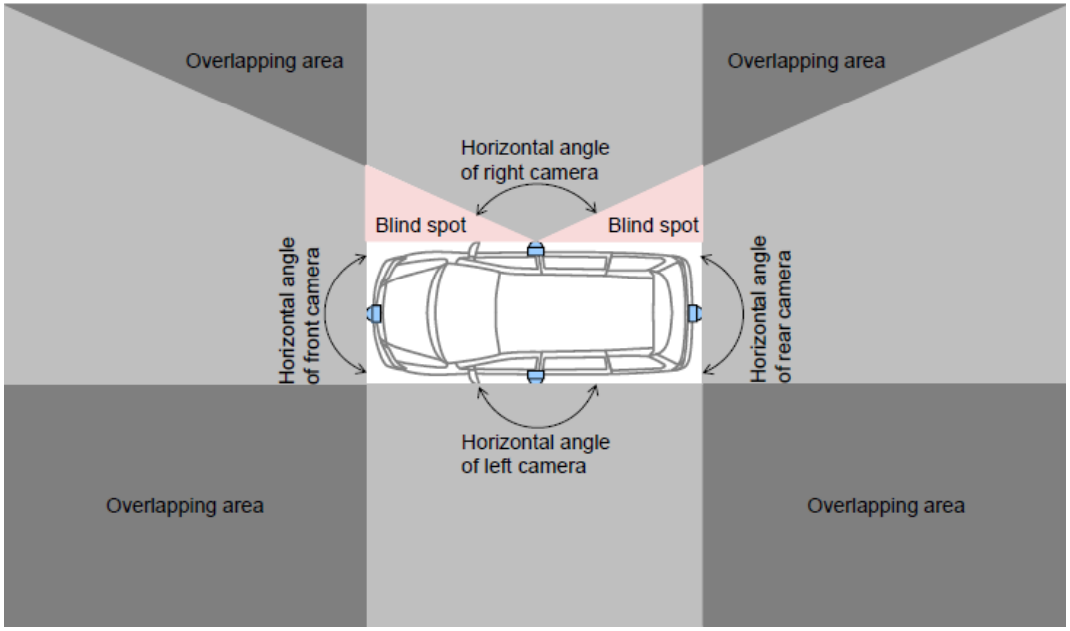
June, 2015

System model

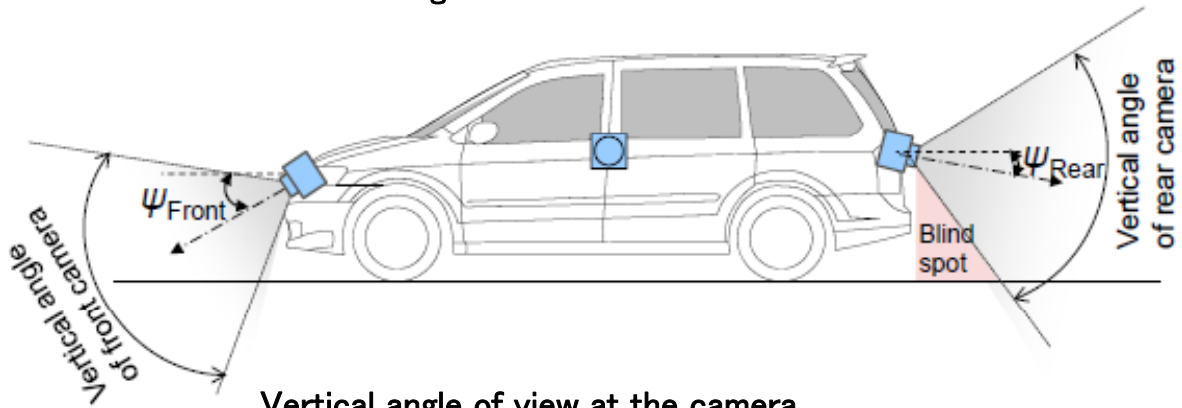


Camera mounting and field of view

The horizontal angle, vertical angle of view at the camera and Tilt angle [∅] should be decided for generating no blind spot.



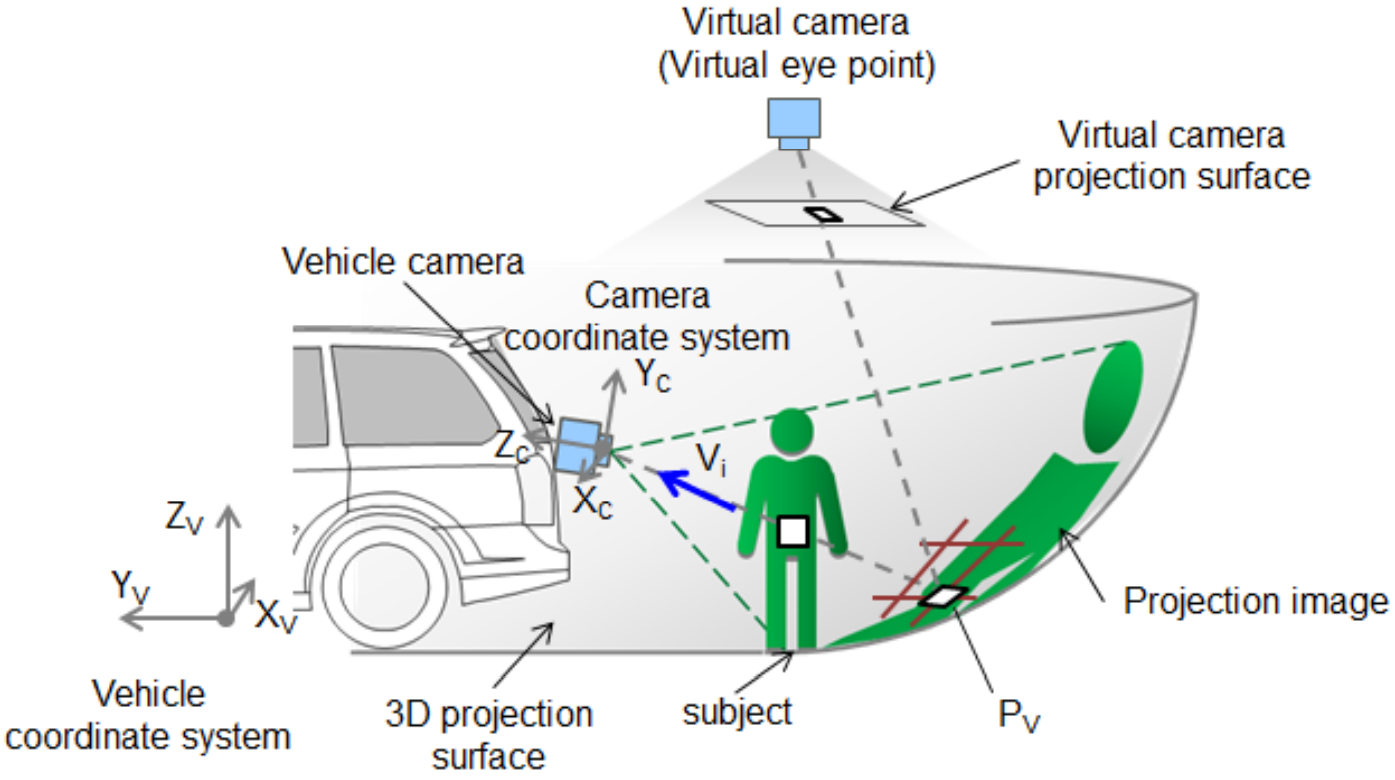
Horizontal angle of view at the camera



Vertical angle of view at the camera

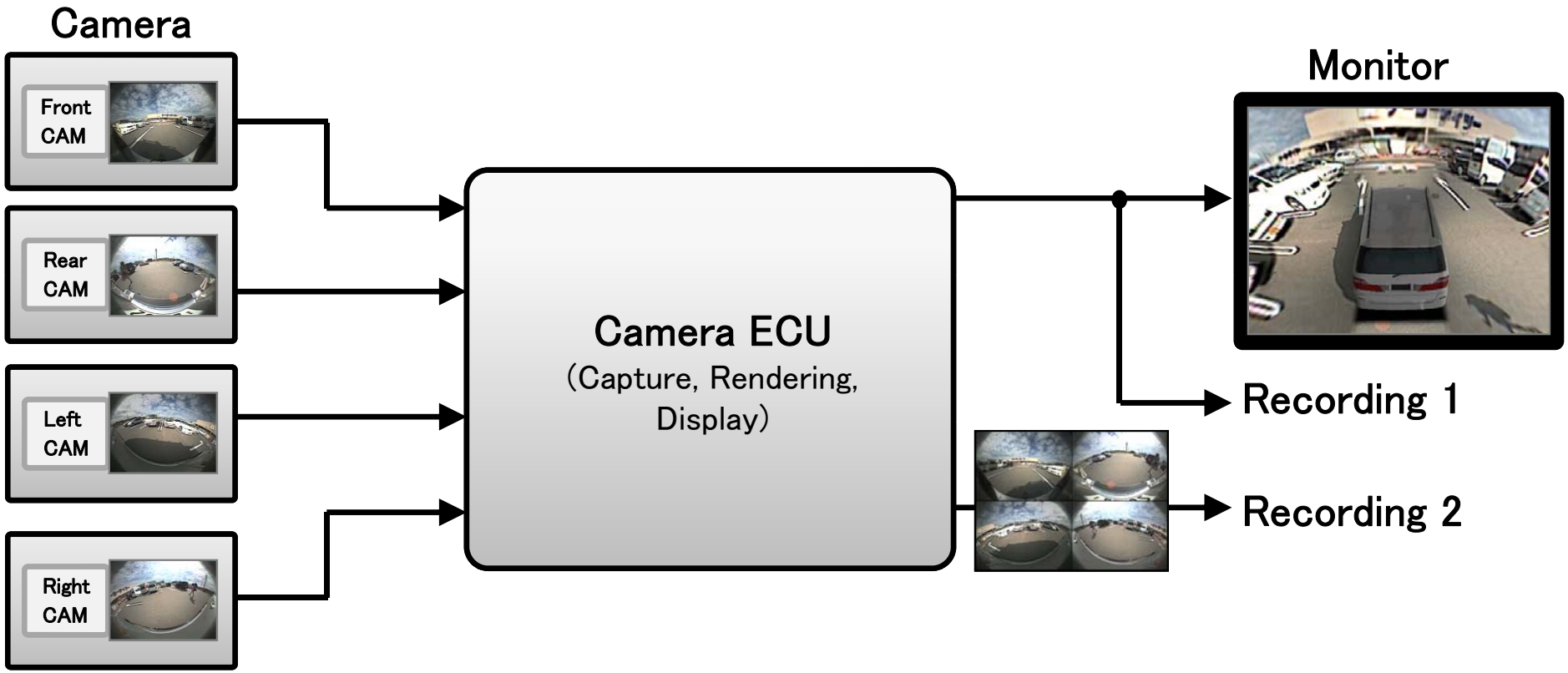
Projecting to 3D projection surface

The polygon model constituting 3D projection surface is visualized from any virtual eye point. Visualizing the polygon model uses 3D computer graphics technology.
The wrap around view image is composed by polygon rendering with a video image updated in real time as the texture image.
This polygon rendering uses the camera image coordinates associated with the polygon vertices as texture coordinate.



Part 2: Recording

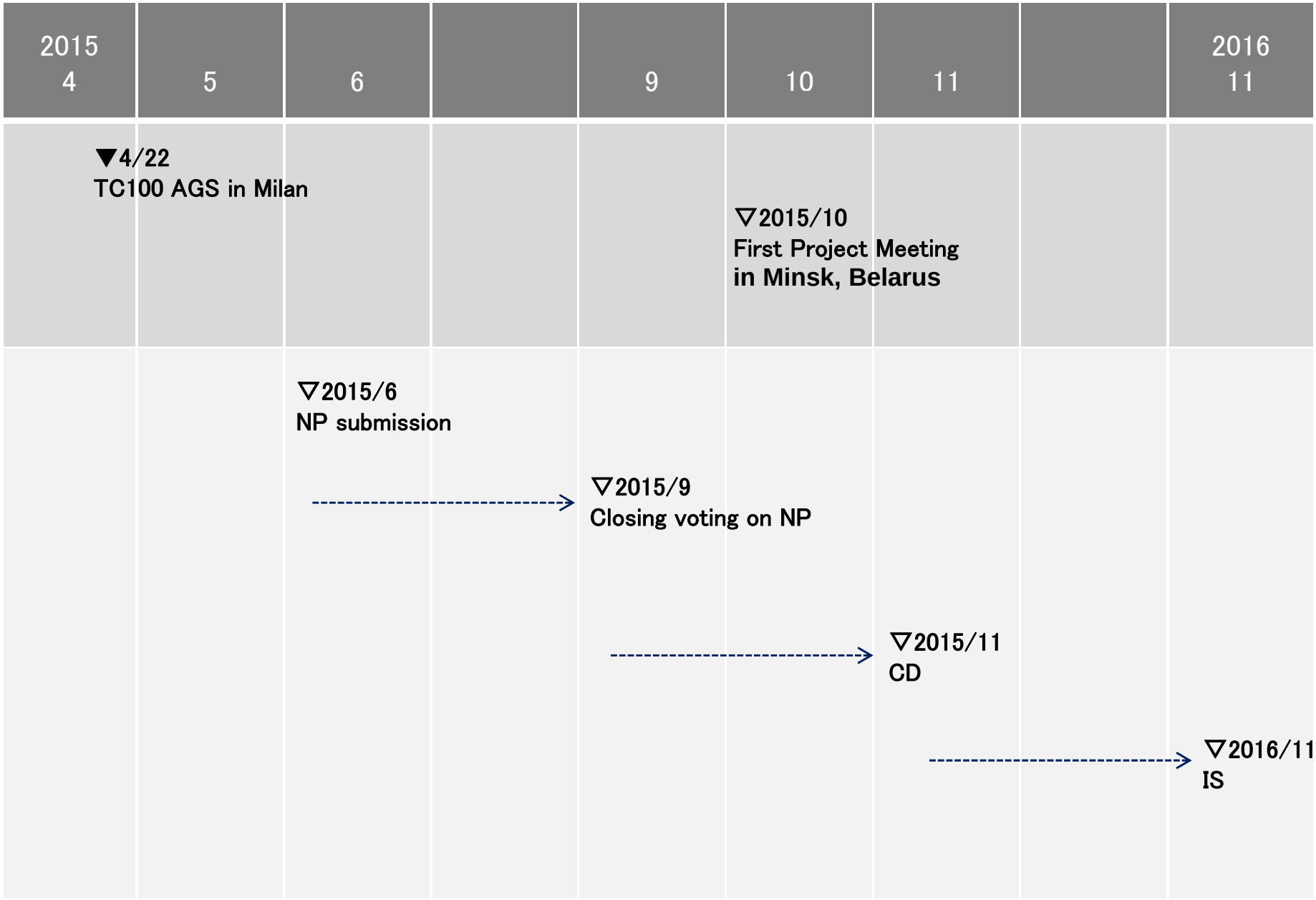
Part 2 will specifies the functionality of Recording.
Recording 1 records composition view image.
Recording 2 records Un composition view image and various camera parameter.
The transmission of various camera parameter is defined as meta data in IEC 61883-8.



Part 3: Measurements

Part 3 will specifies the requirement of Measurement for camera calibration precision and composition view image quality.

Schedule on proposed NP



Thank you for your attention.

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