BMW Forschung u. Technik GmbH.
25th Anniversary of a Think Tank.

Narrow-passage Assistant.

BMW Group
Narrow-passage Assistant.

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Motivation.

Competent passage through narrow lanes

Considering
– yellow road markings
– safety fences and barriers
– vehicles on neighbouring lanes
Activation together with lane departure warning
Lane departure warning orients towards yellow road markings
Measures the effectively available width of roadway (preSite)
Measures the clearance to barriers and to other vehicles (inSite)
Laser scanner for preSite
The laser scanner monitors the space in front of your own vehicle for other vehicles, barriers and safety fences (red markings in the picture)

Ultrasonic parking sensors for inSite
The ultrasonic parking sensors monitor the lateral clearance (yellow markings in the picture)
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Sensor Ranges.

Laser scanner
- horizontal angle of beam: 160°
- vertical angle of beam: 3,2°
- range: 100 m

Ultrasonic sensors
- horizontal angle of beam: 32°
- vertical angle of beam: 9,5°
- range: up to 5 m (in relation to velocity)
Narrow-passage Assistant.
preSite.

Measures the effectively available width of the road.
Displays the lateral clearance on left and right side.
Feedback for the driver on which side there is less clearance to the barrier or vehicle.

1 circle: much space (0.5 – 1.0 meters)
2 circles: little space (0.2 – 0.5 meters)
3 circles: very little space (< 0.2 meters)

If the distance goes below the safety clearance, there will be an additional warning via Head-Up Display.
Monitors the lateral clearance while passing the constriction
Also uses the laser scanner data
Feedback via the steering wheel (directional steering momentum)
additional indication via Head-Up Display (like preSite)
Narrow-passage Assistant.
Thank you for your attention.