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| INSTRUCTIONS:   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Fill out the hazard analysis and risk assessment below.   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| HA-001 should be for the lane departure warning function as discussed in the lecture.                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| HA-002 should be for the lane keeping assistance function as discussed in the lecture.                                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Then come up with your own situations and hazards for the lane assistance system. Fill in the HA-003 and HA-004 rows. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| When finished, export your spreadsheet as a pdf file so that a reviewer can easily see your work.                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| Hazard ID | Situational Analysis  |                      |                        |                   |                          |                       |  | Hazard Identification   |   |                             |                                    |   | Hazardous Event Classification  |                         |                                  |                              |                          | Determination of ASIL and Safety Goals |  |                    |  |
|-----------|-----------------------|----------------------|------------------------|-------------------|--------------------------|-----------------------|--|-------------------------|---|-----------------------------|------------------------------------|---|---------------------------------|-------------------------|----------------------------------|------------------------------|--------------------------|--|--|--------------------|--|
|           | Operational Mode      | Operational Scenario | Environmental Details  | Situation Details | Other Details (optional) | Item Usage (function) | Situation Description                    | Function                | Deviation                               | Deviation Details           | Hazardous Event (resulting effect) | Event Details                           | Hazardous Event Description     | Exposure (of situation) | Rationale (for exposure)         | Severity (of potential harm) | Rationale (for severity) | Controllability (of hazardous event)   | Rationale (for controllability)                  | ASIL Determination | Safety Goal                              |
| HA-001    | DM03 - Normal Driving | OS04 - Highway       | EN02 - Rain (slippery) | SD02 - High speed |                          | LD01 - Correctly      | Normal driving on a highway during rain  | Lane Departure          | DV04 - Actor effort                     | The lane departure warning  | EV00 - Collision with              | The driver can lose the control to      | The lane departure warning      | E3 - Medium prob        | This situation could happen 1 %  | Q3 - Life threatening or     | Collision at high speed  | C3 - Difficult to control or           | Having this too much torque with high speed lead | C                  | The oscillating steering torque from the |
| HA-002    | DM03 - Normal Driving | OS03 - Country Road  | EN01 - Normal          | SD02 - High speed |                          | LD02 - Incorrectly    | Normal driving on a country road and not | Lane Keeping Assistance | DV03 - Functioned                       | The lane keeping assistance | EV00 - Collision with              | The driver uses it as if it's automatic | The driver used the function in | E2 - Low probab         | This situation could happen less | Q3 - Life threatening or     | Collision at high speed  | C3 - Difficult to control or           | The driver's not controlling the vehicle at high | B                  | The lane keeping assistance function in  |
| HA-003    | DM03 - Normal Driving | OS04 - Highway       | EN01 - Normal          | SD02 - High speed |                          | LD01 - Correctly      | Normal driving on a highway and          | Lane Departure          | DV02 - Function stops working while the | LD02 - Collision with       | LD01 - Collision with              | LD01 - Collision with                   | LD01 - Collision with           | E3 - Medium prob        | The situation could happen 1 %   | Q3 - Life threatening or     | Collision at high speed  | C3 - Difficult to control or           | LD01 - Collision with                            | C                  | ing function shall stop when the camera  |
| HA-004    | DM03 - Normal Driving | OS03 - Country Road  | EN01 - Normal          | SD02 - High speed |                          | LD01 - Correctly      | Normal driving on a country road and con | Lane Keeping Assistance | DV02 - Function stops working while the | LD02 - Collision with       | LD01 - Collision with              | LD01 - Collision with                   | LD01 - Collision with           | E3 - Medium prob        | The situation could happen 1 %   | Q3 - Life threatening or     | Collision at high speed  | C3 - Difficult to control or           | LD01 - Collision with                            | C                  | ence function shall stop when the camera |