

Decomposing ASIL

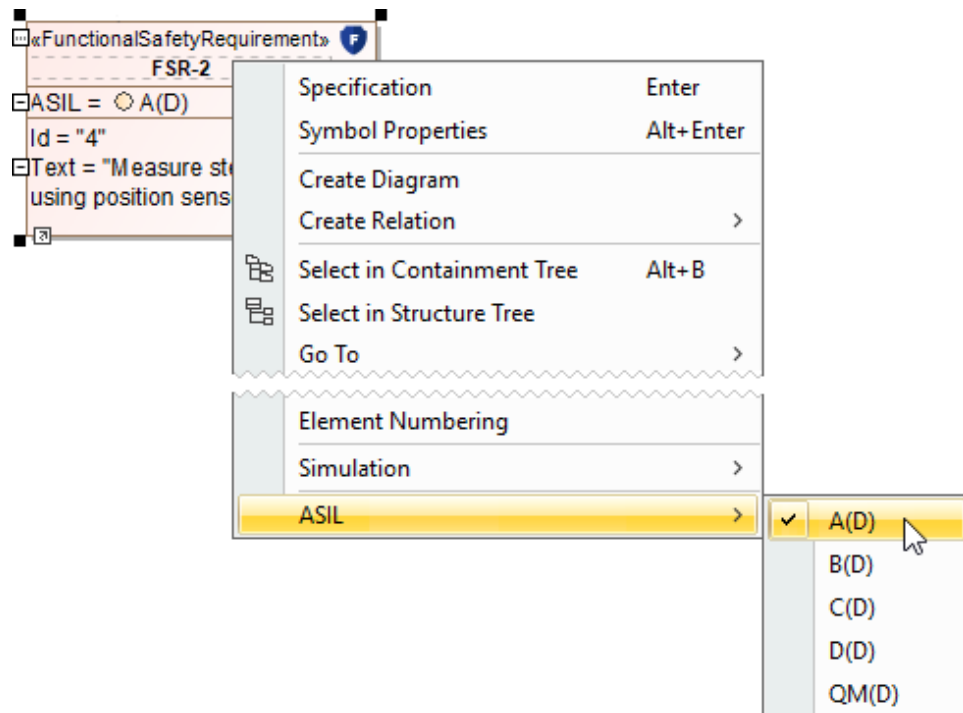
The Automotive Safety Integrity Level (ASIL) expresses the criticality associated with a function of the system. It defines the safety requirements that must be fulfilled by the design and development of the system in such a way that, even in conditions of failure, the system provides a sufficient margin of safety for the users (driver, passengers, road traffic participants, etc.). Under certain circumstances, the ASIL can be lowered through the technique of ASIL decomposition.

The following table displays valid ASIL decomposition combinations:

ASIL value	ASIL decomposition combinations		
D	$C(D) + A(D)$	$B(D) + B(D)$	$D(D) + QM(D)$
D(D)	$C(D) + A(D)$	$B(D) + B(D)$	$D(D) + QM(D)$
C	$B(C) + A(C)$	$C(C) + QM(C)$	
C(D)	$B(D) + A(D)$	$C(D) + QM(D)$	
C(C)	$B(C) + A(C)$	$C(C) + QM(C)$	
B	$A(B) + A(B)$	$B(B) + QM(B)$	
B(D)	$A(D) + A(D)$	$B(D) + QM(D)$	
B(C)	$A(C) + A(C)$	$B(C) + QM(C)$	
B(B)	$A(B) + A(B)$	$B(B) + QM(B)$	
A	$A(A) + QM(A)$		
A(D)	$A(D) + QM(D)$		
A(C)	$A(C) + QM(C)$		
A(B)	$A(B) + QM(B)$		
A(A)	$A(A) + QM(A)$		

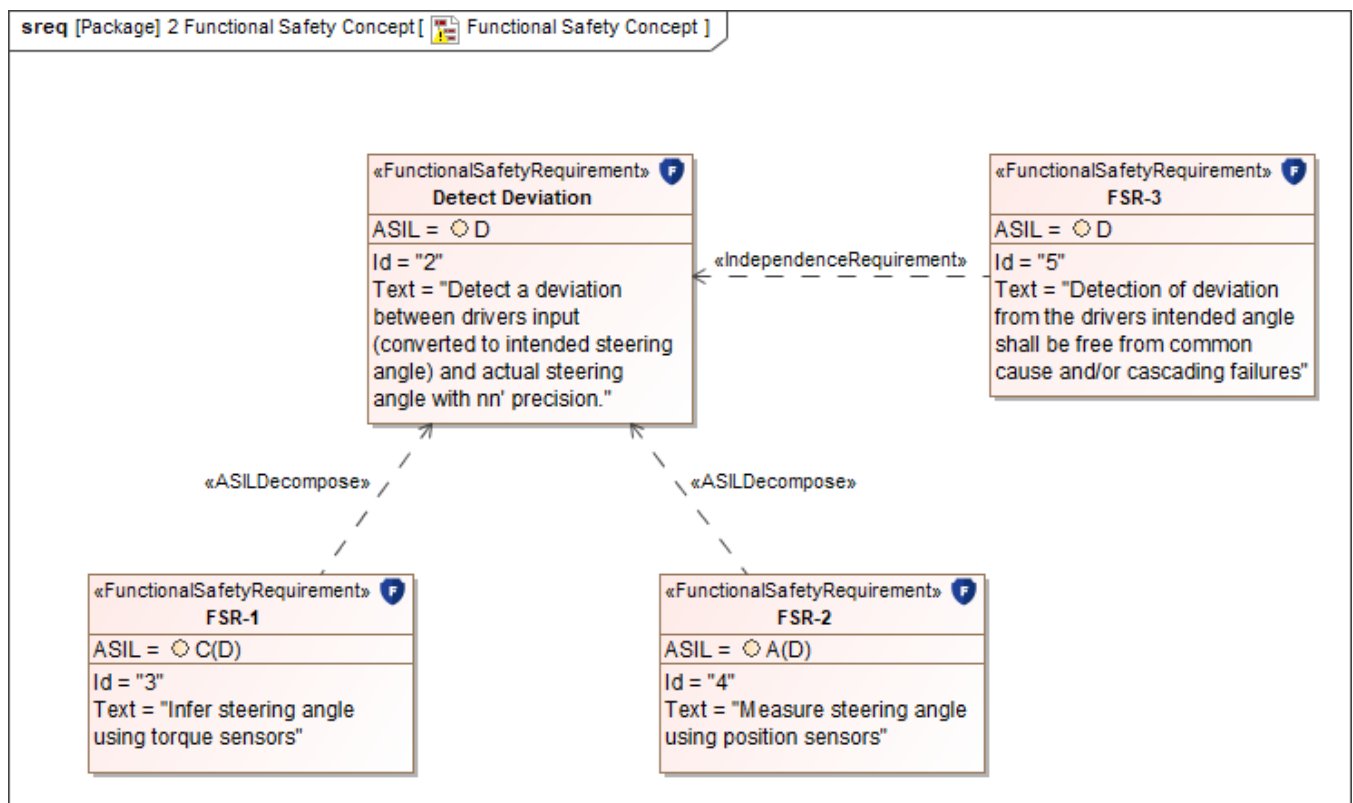
To decompose an ASIL value

1. In a [Safety Requirement Diagram](#), create two Safety Requirements and name them. These will be the Requirements with decomposed (lower) ASIL values.
2. Create ASIL Decomposition relationships from the Safety Requirements created in the previous step to the Safety Requirement whose ASIL value you want to decompose.
3. Right-click the shape of one of the Safety Requirements created in step 1, select **ASIL**, and select the desired ASIL value for that Requirement. The ASIL value of the other Safety Requirement is specified automatically according to the ASIL decomposition rules described in the above table.



4. In the same diagram, create one more Safety Requirement.
5. Create the Independence Req relationship from the Requirement created in the previous step to the Safety Requirement whose ASIL value you decomposed.

After completing the above steps, your diagram should look similar to the sample diagram shown below.



A sample Safety Requirement Diagram displaying how to decompose the ASIL value of the *Detect Deviation* Safety Requirement.