

FIMCAR

Full Width Test:

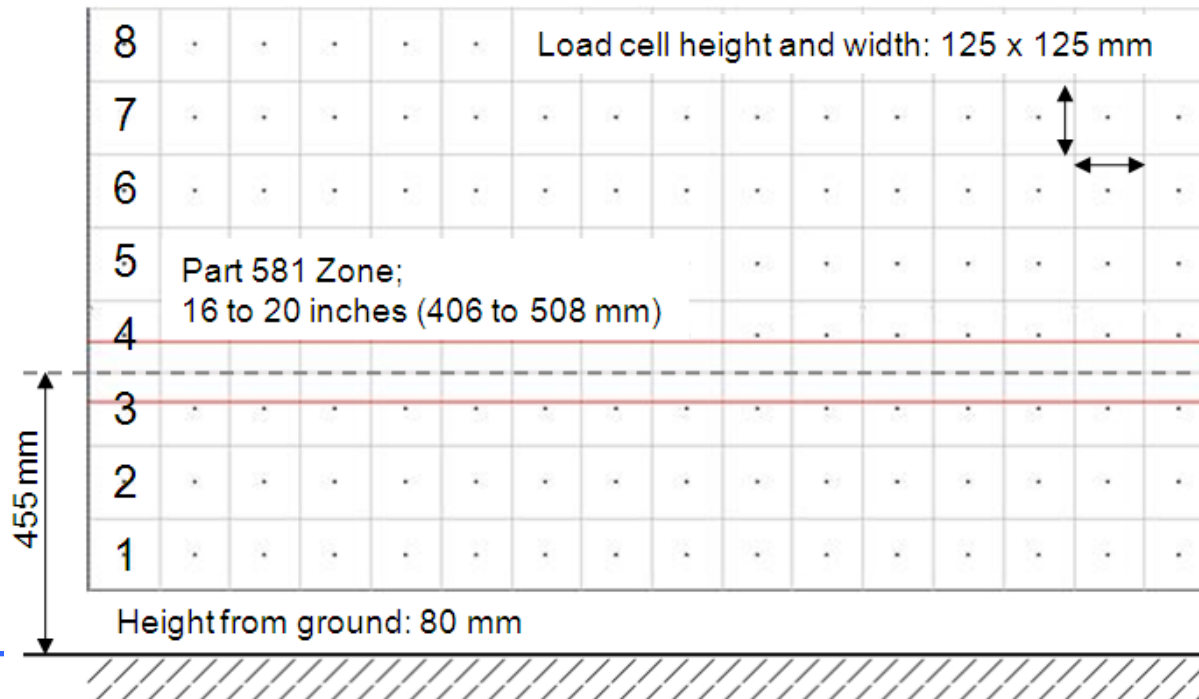
Current Status and Way Forward

Mervyn Edwards

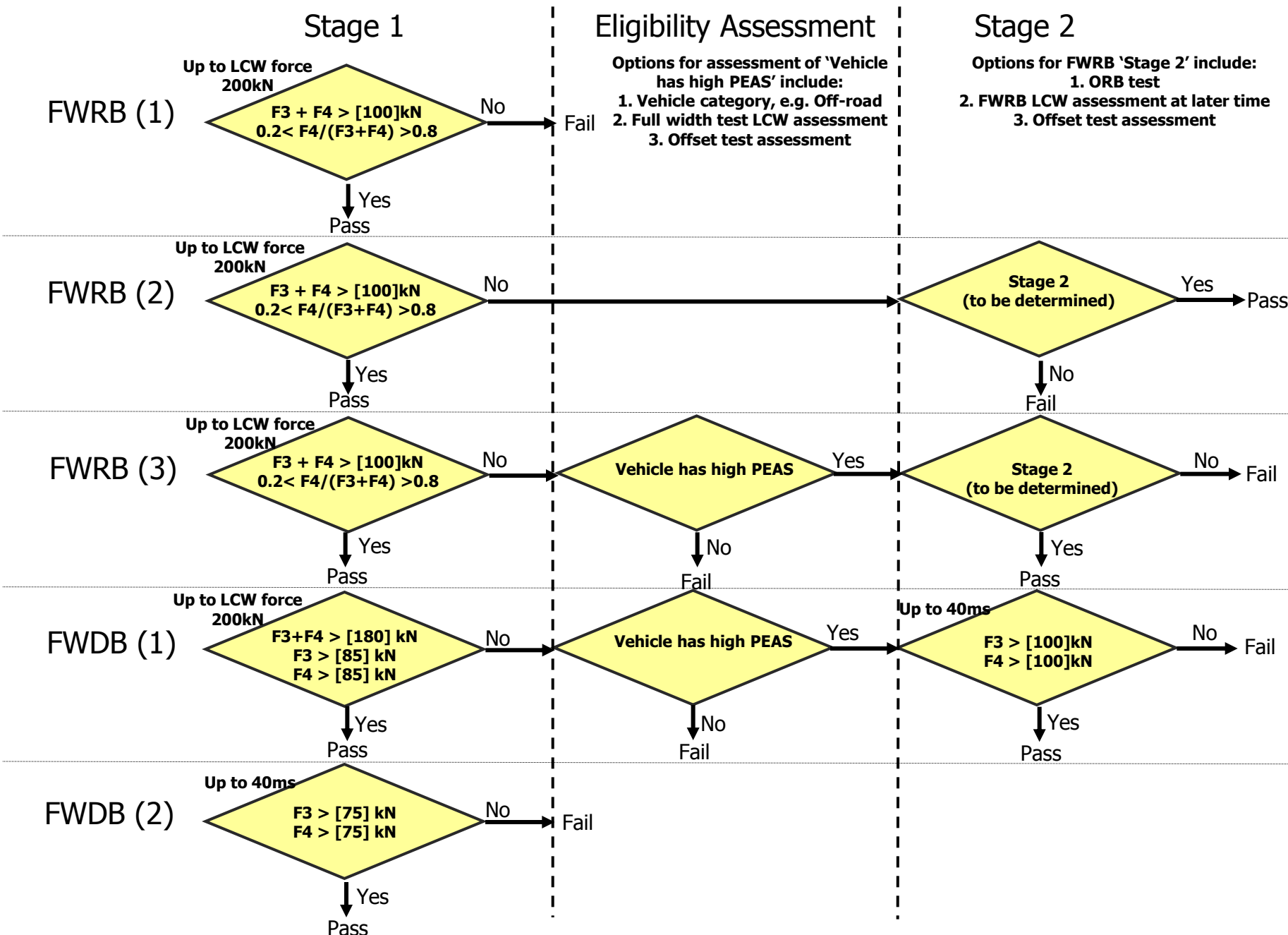
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Objective

- Derive metric to assess and control the alignment of vehicle structures in a common interaction zone
 - LCW Rows 3 & 4 (Part 581 zone)



Current Status



FWRB vs FWDB

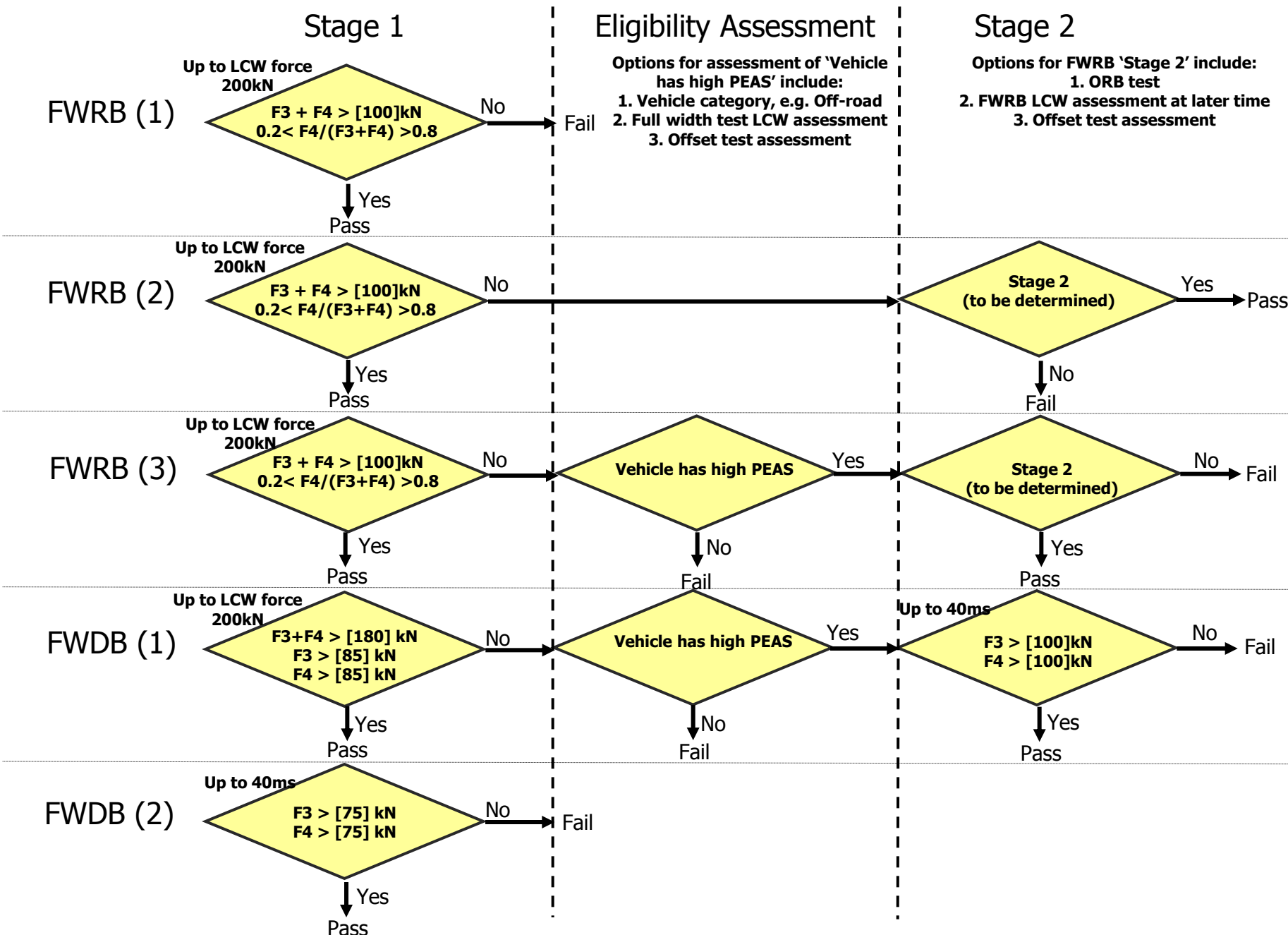
- FWRB
 - Direct measurement of forces without ‘filtering’ by deformable face
 - No possibility of load spreading by deformable face
 - No problems with stability of deformable face
 - Effectively already de-facto worldwide standard test
- FWDB
 - More representative of real world accident especially in initial stage of impact
 - More representative for initial deceleration of vehicle and loading of main rails and more representative test for restraint trigger sensors
 - Engine dump loading attenuated, so can make assessment of vehicle structural loading at later stages of impact
 - Can assess SEAS structures, so no need for supplementary test, e.g. ORB
 - Possibly can assess horizontal structures (bumper beams)

- FWRB and FWDB both have advantages and disadvantages but FWDB probably has the edge technically
 - Can make assessment later in impact
 - No need for supplementary test for vehicles which do not have PEAS in alignment with common interaction zone
- However, FWRB is already defacto worldwide standard test and hence has large advantage for harmonisation



Prioritise development of FWRB metrics

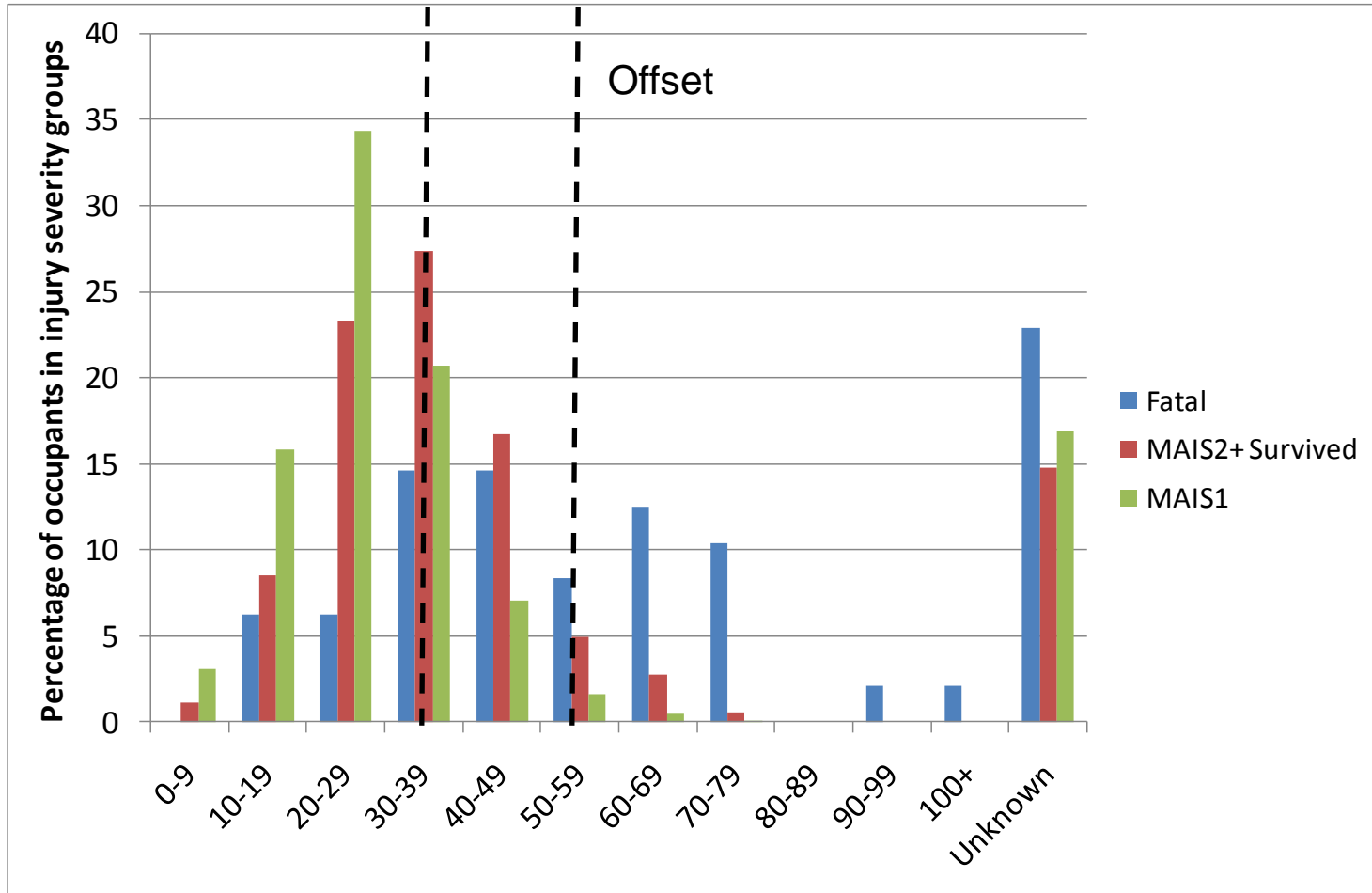
Current Status



Way forward

- Establish feasibility of FWRB single stage metric
- Complete development of Stage 1 metric
 - Consider refinements to take into account lower load paths on cars
- Develop Stage 2 test and metric
 - FWRB LCW assessment
 - Override Barrier (ORB)
 - PDB
- Develop eligibility assessment
 - Vehicle category
 - LCW assessment
 - PDB assessment
- Validation
- Benefits and costs analysis

TEST SEVERITY



Percentage of occupants in injury severity groups against ETS (km/h)

