OICA

Task Force DPPS

Static and Dynamic Testing
of Deployable Systems

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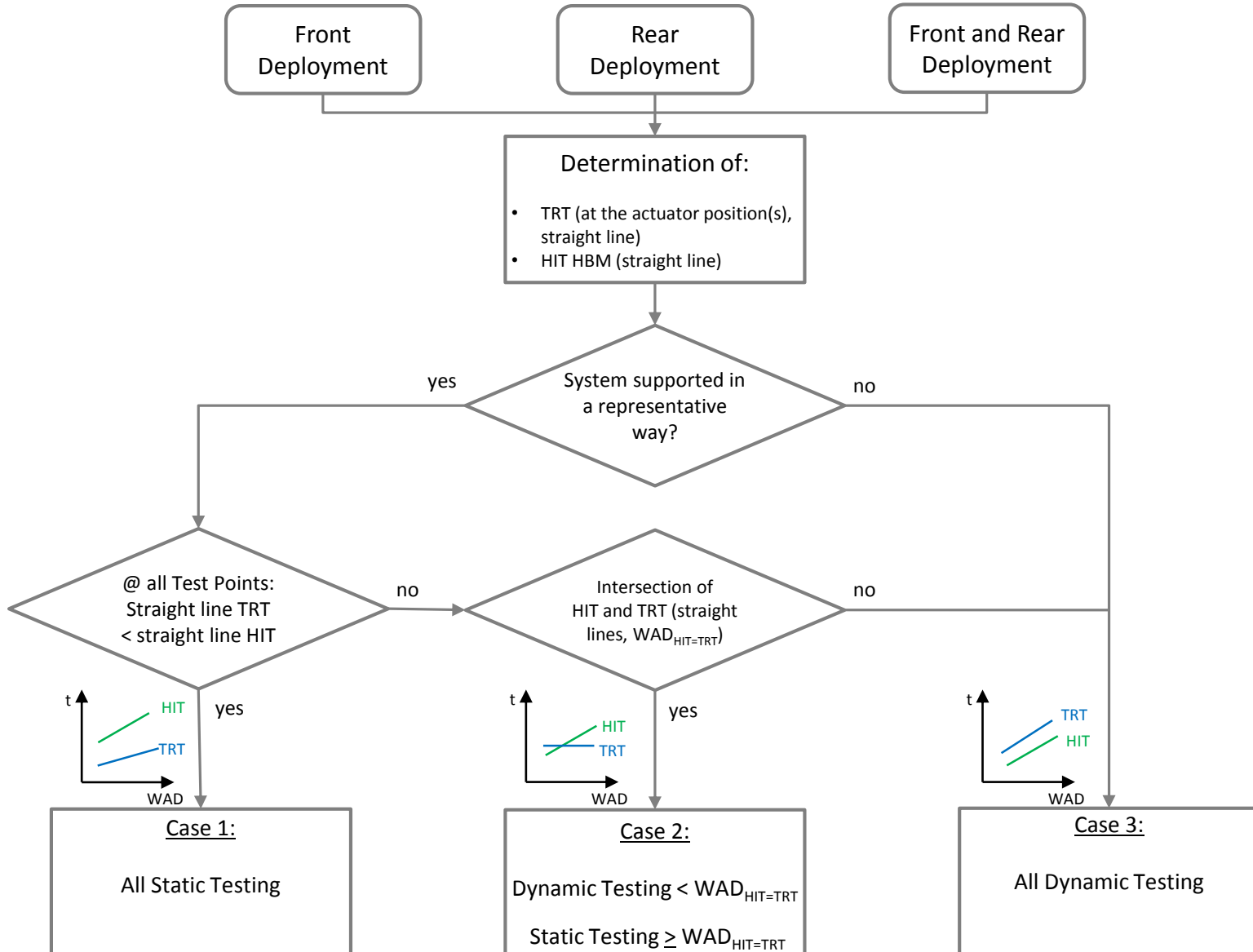
Motivation of Proposal

- Depending on the vehicle geometry, the smallest appropriate stature may or may not hit before the system is deployed or in the intended position

- However, the other statures may have a timing where the system is deployed or in the intended position before their respective contact time

- Allowing a differentiation between respective dynamic and static tests based on the HBM HITs would be a benefit for easier testing while assessing the respective relevant system condition per WAD

Proposal

|	Type Approval Procedure (according to INF GR PS 141) (current)	Regulatory Requirement Discussion, Recommendation for a Certification Procedure (based on INF GR PS 141) (future)
Dummy (6yoc, 5%f, 50%m)	smallest appropriate stature	smallest appropriate stature per WAD Remark: Where the system is not deployed or in the intended position before the HIT for an appropriate stature, all test points forward of the corresponding WAD will be tested dynamically
Decision Criteria Dynamic vs. Static Testing	Perform LEGFORM TEST or UPPER LEGFORM TEST to bumper to measure TRT at the lifting device. Demonstrate that: • The system reaches and remains in the intended position before head impact of the smallest appropriate pedestrian	Perform LEGFORM TEST or UPPER LEGFORM TEST to bumper to measure TRT at the lifting device. Demonstrate that: • The system is supported in a representative way[2] • TRT < HIT (6yo or 5% or 50% depending on impact location, the System reaches and remains in the intended position before head impact)

[2] "Supported in a representative way" could mean e.g. by a spring system.
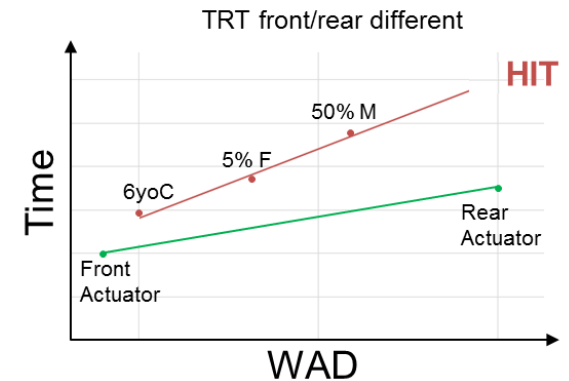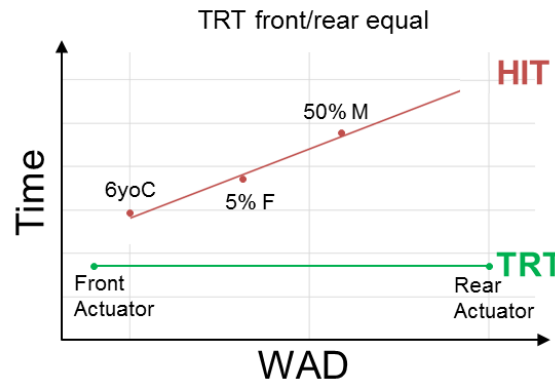
Flowchart

Example Static Case

Rear <u>or</u> Front Deployment only
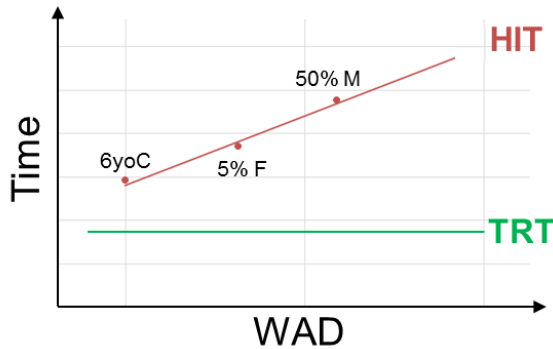
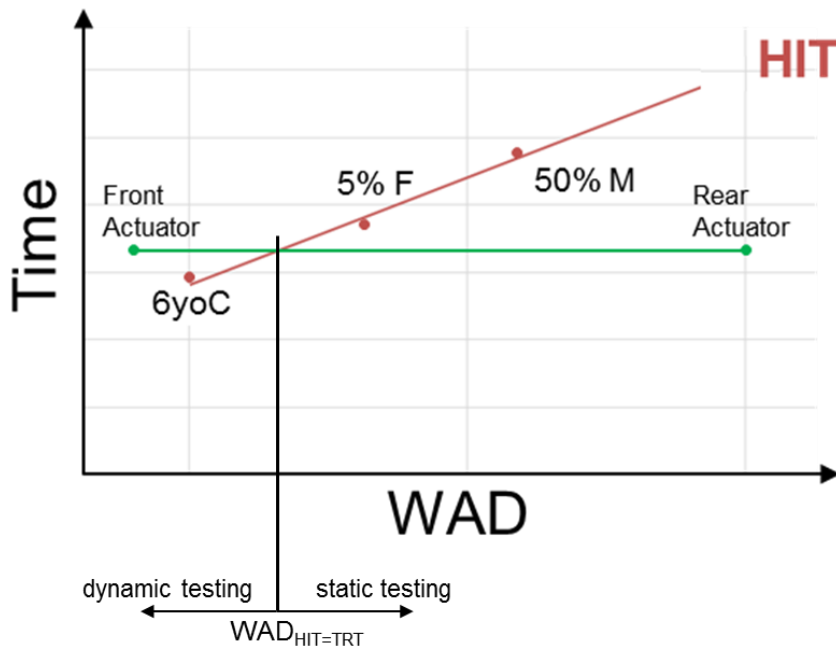**Rear <u>and</u> Front Deployment**

TRT front/rear equal

TRT front/rear different

straight line TRT < straight line HIT

✔

Examples Static and Dynamic Case

Up to $WAD_{HIT=TRT}$:
straight line TRT < straight line HIT
is not fulfilled ✗

➡ **dynamic testing**

From $WAD_{HIT=TRT}$:
straight line TRT < straight line HIT
is fulfilled:

➡ **static testing** ✓

<u>Summary</u>

- Depending on the vehicle geometry, the smallest appropriate stature may or may not hit before the system is deployed or in the intended position

- The next taller HBM may hit later and enable testing in a static condition

- Allowing for both test methods on one vehicle would provide simplified way of testing as less material and time is required

- Based on the Flowchart the decision for differentiation between respective dynamic and static tests is objectified

  - ➢ **Industry appeals to allow both test methods on one vehicle and decide per Test Point (WAD) based on TRT and HIT comparison**