METHODS FOR SPEECH AND AUDIO EVALUATION IN VEHICLES

Jan Reimes – Rapporteur Q4/12

Workshop on Voice Recognition Implementation

11 July 2023

Introduction

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Objective:

- Q4/12 scope & core specifications
- New work on automatic speech recognition & overlap with H.VM-VMIA

Introduction to Q4

"Objective methods for speech and audio evaluation in vehicles"

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- Test methodologies and performance requirements of vehicle-related speech communication terminals, in particular:
  - Hands-free telephony → P.1100/1110/1110 (NB/WB/SWB codecs)
  - Emergency call (eCall) systems → P.1140
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- Assumption for all Recommendations:
  - No requirements on components/implementations
  - No access to internals is required to perform testing ("black box")
  - Only use standard electrical and acoustical interfaces

Testing principles – Example setup

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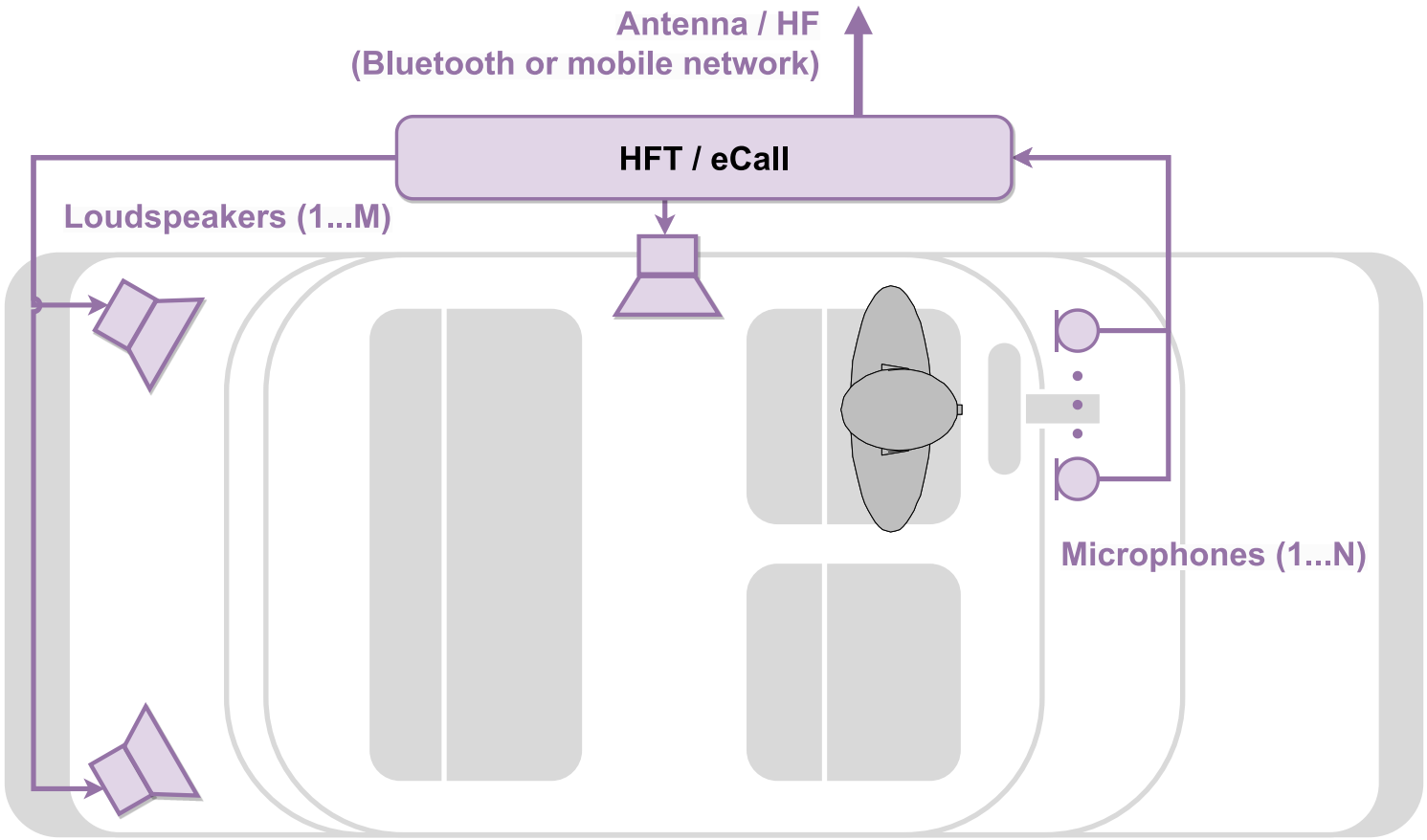

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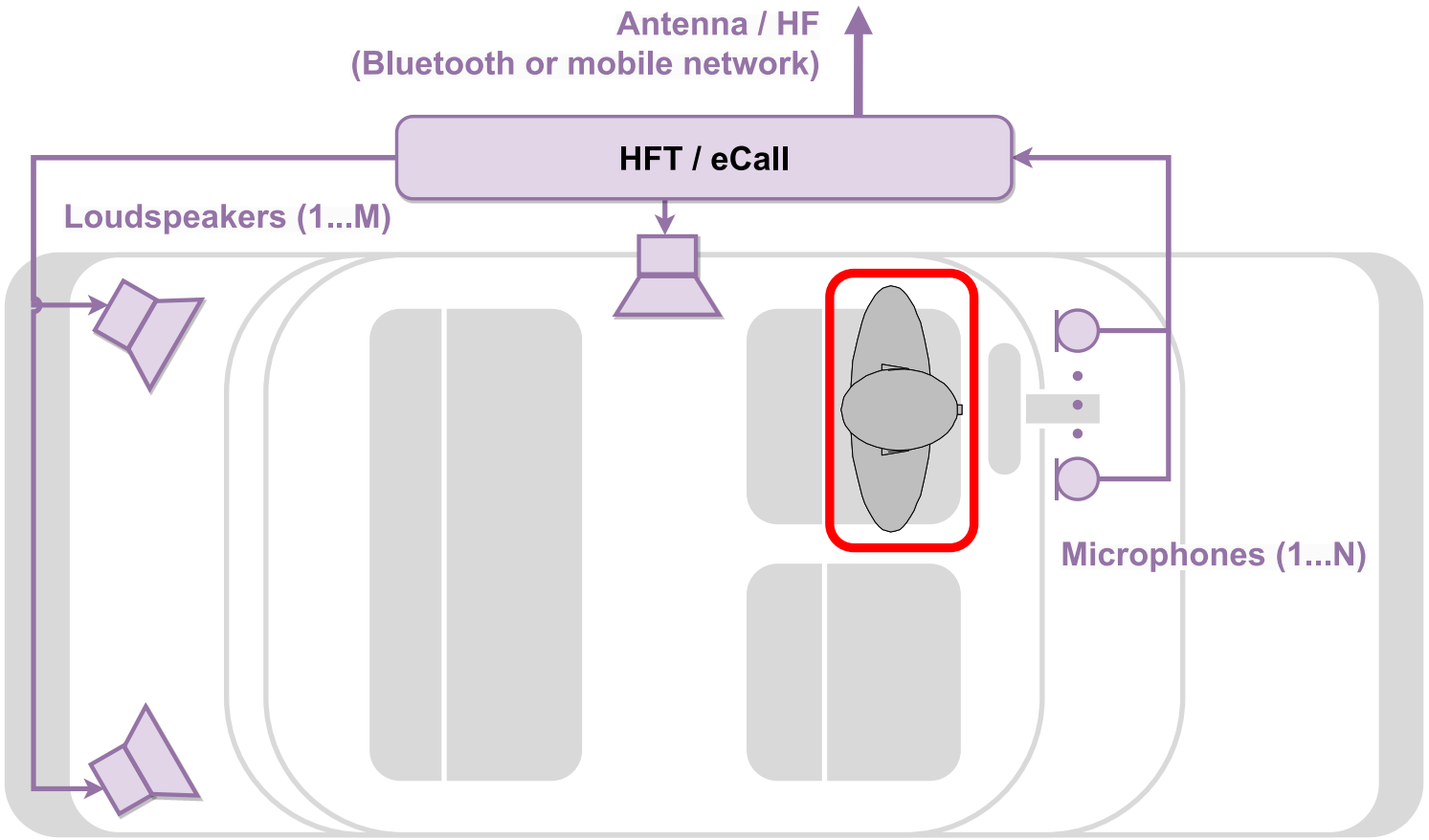
- Acoustic test equipment: Head-and-torso simulator (HATS) (→ P.58)



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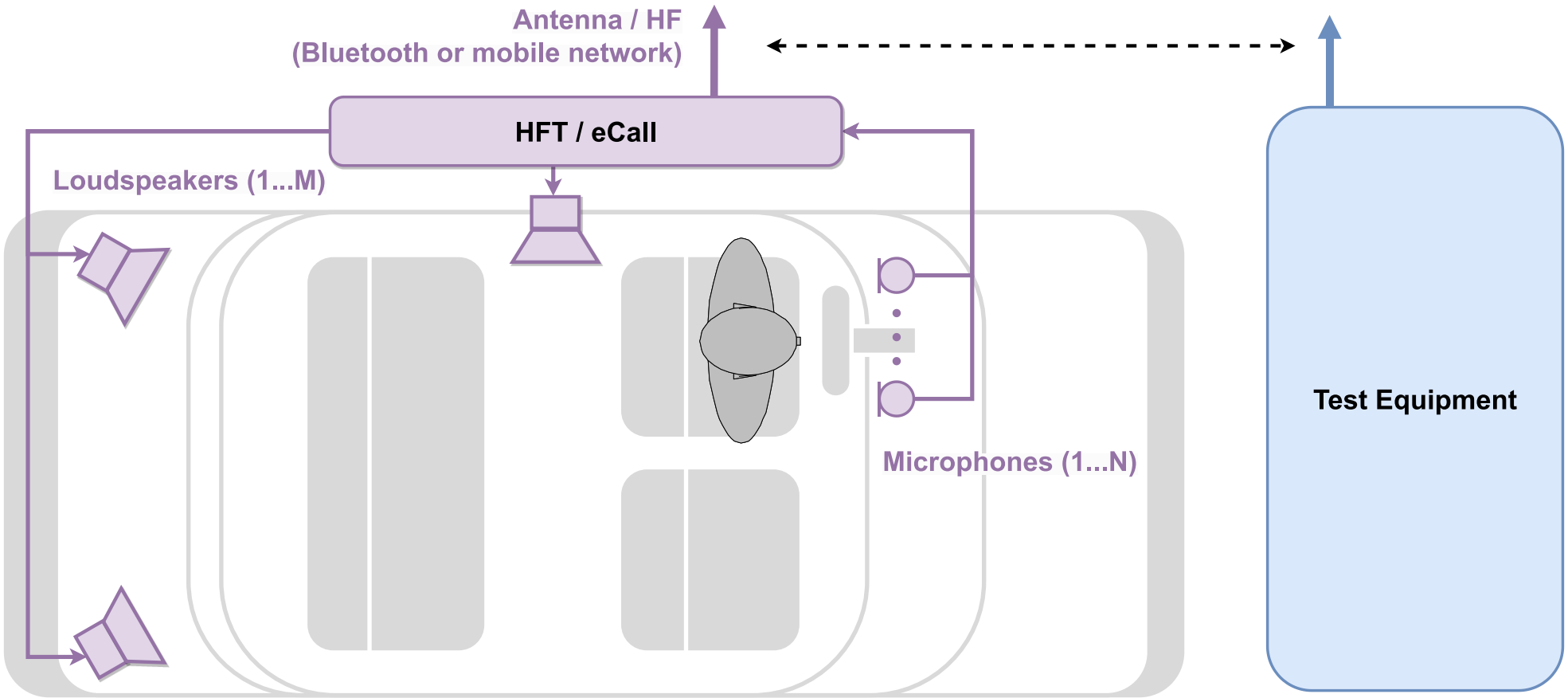

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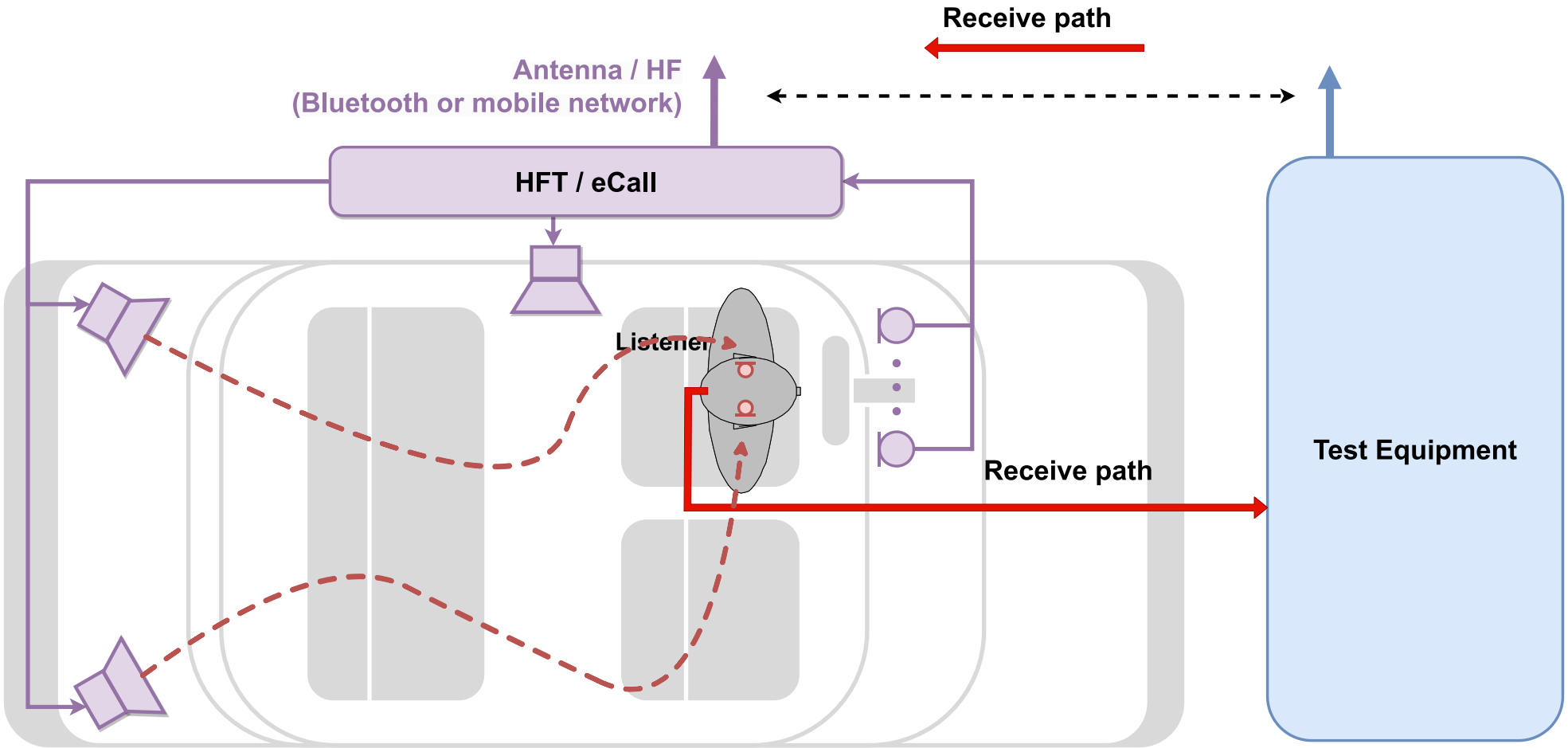

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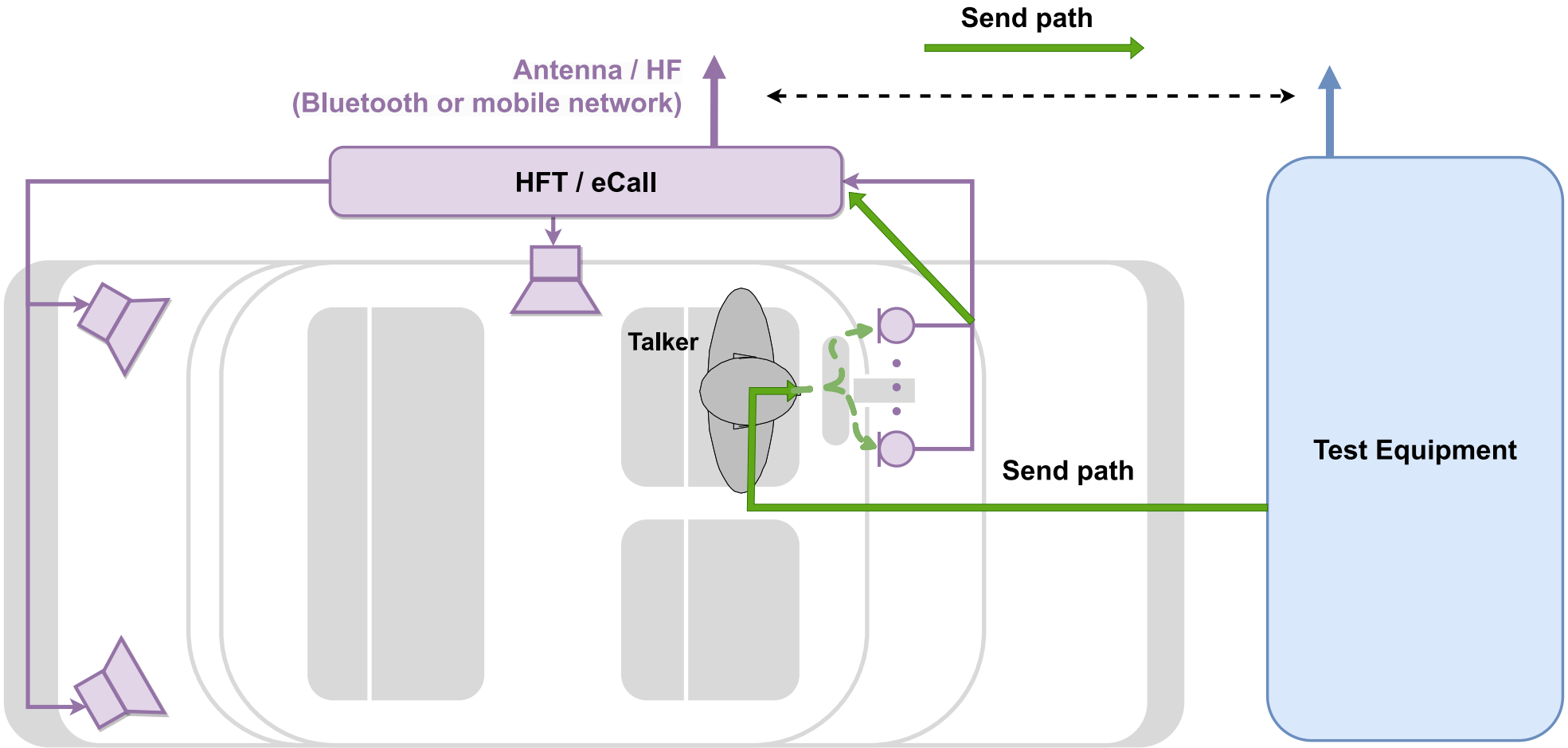

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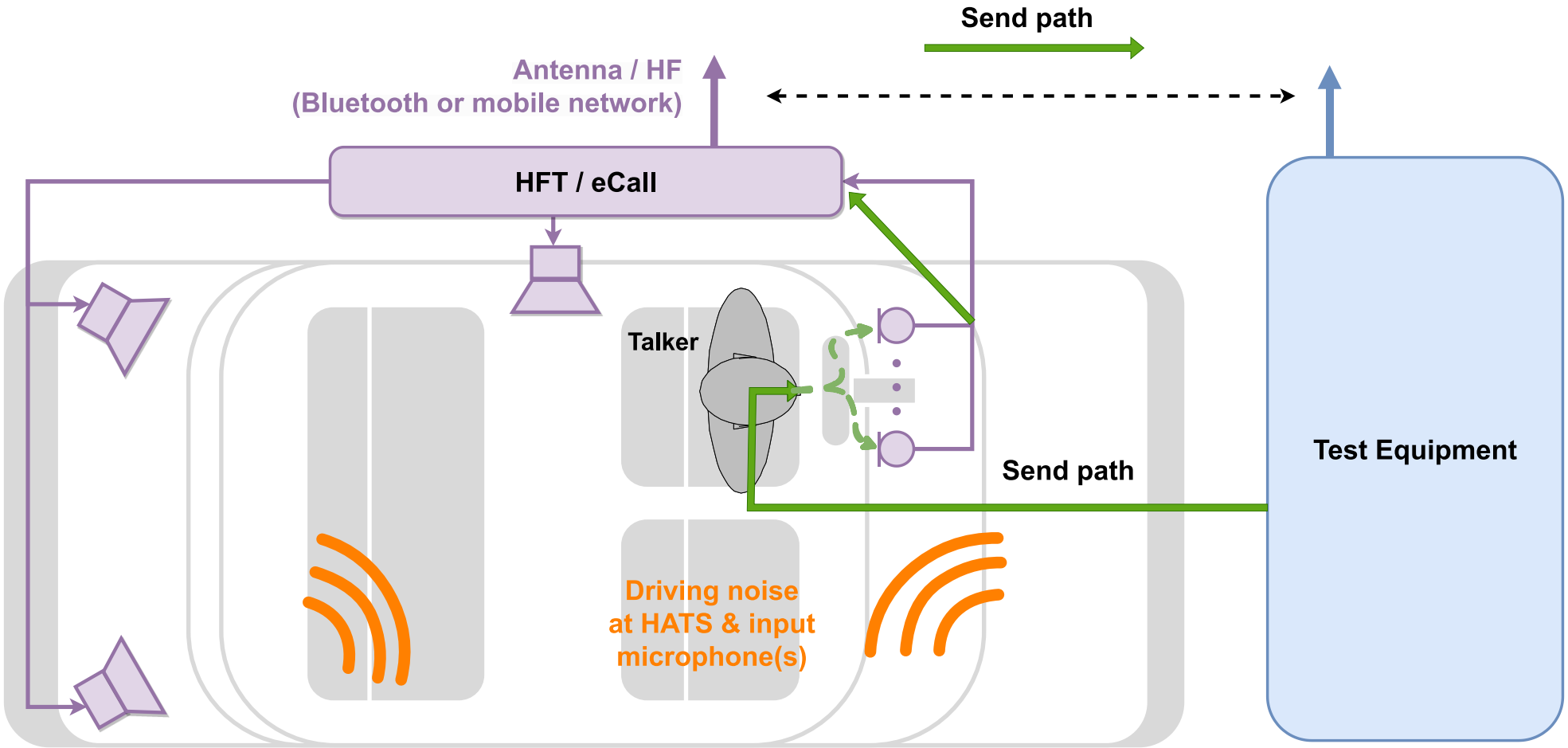

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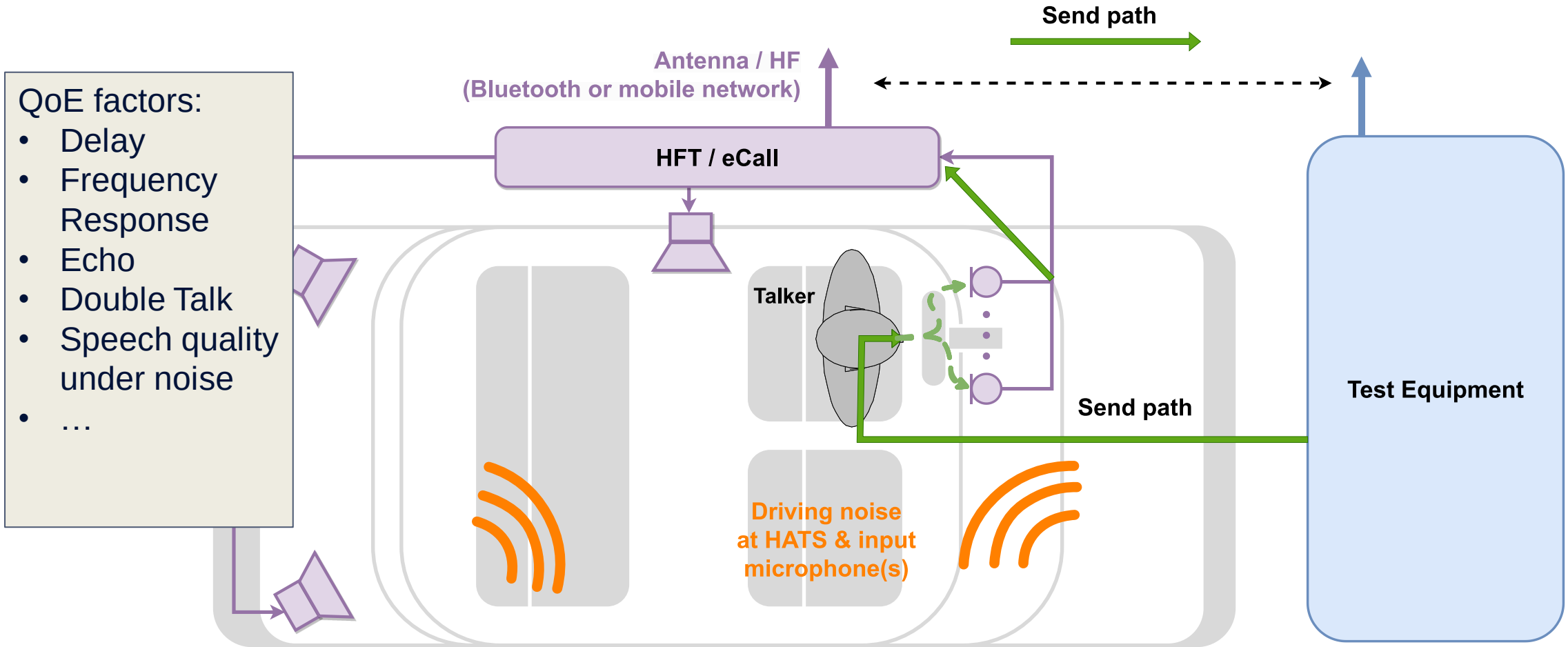

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- Consideration of different ASR systems / classes

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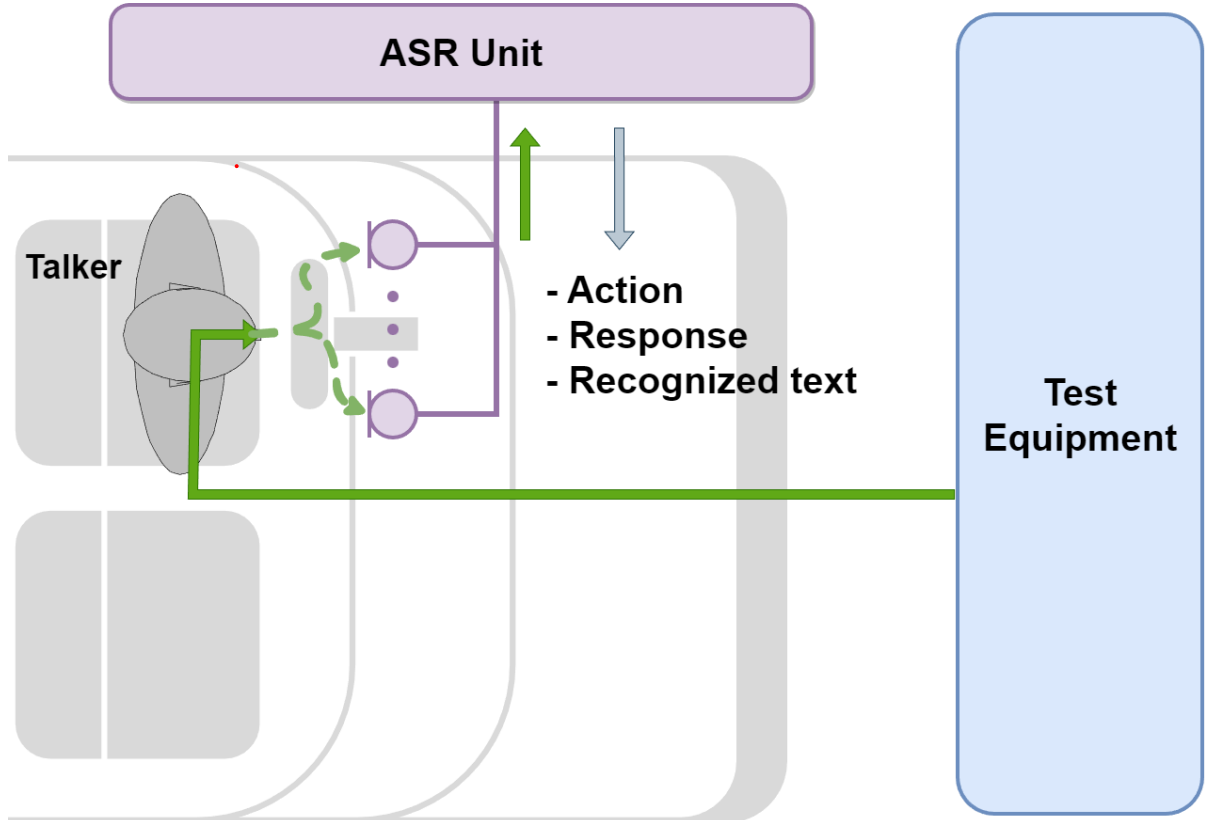

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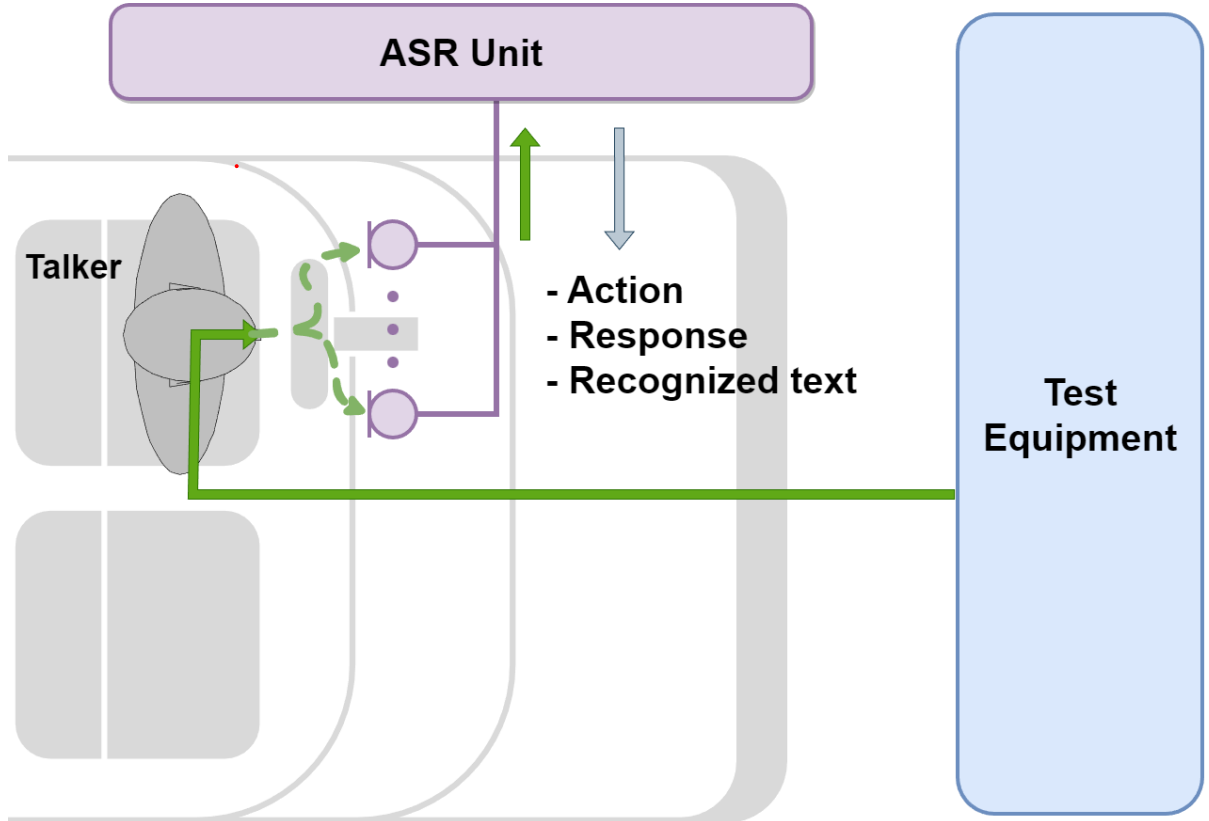

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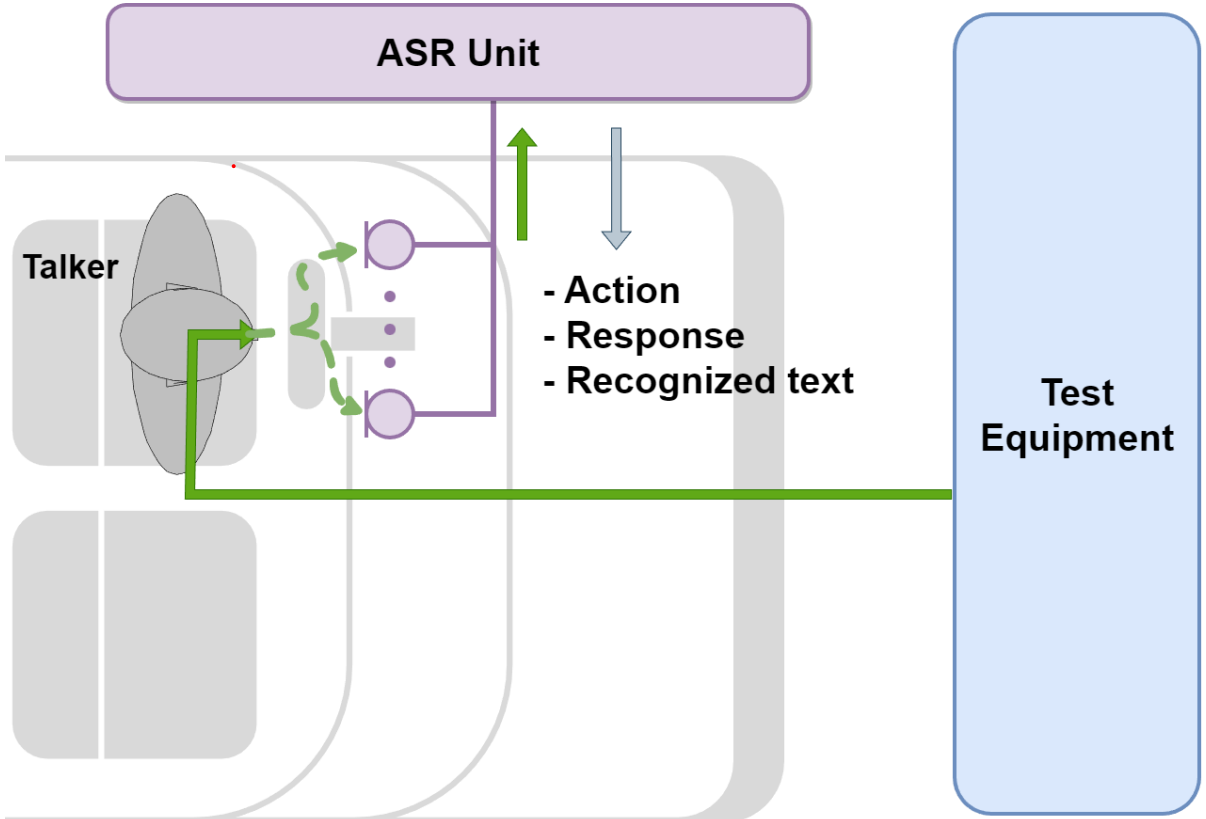

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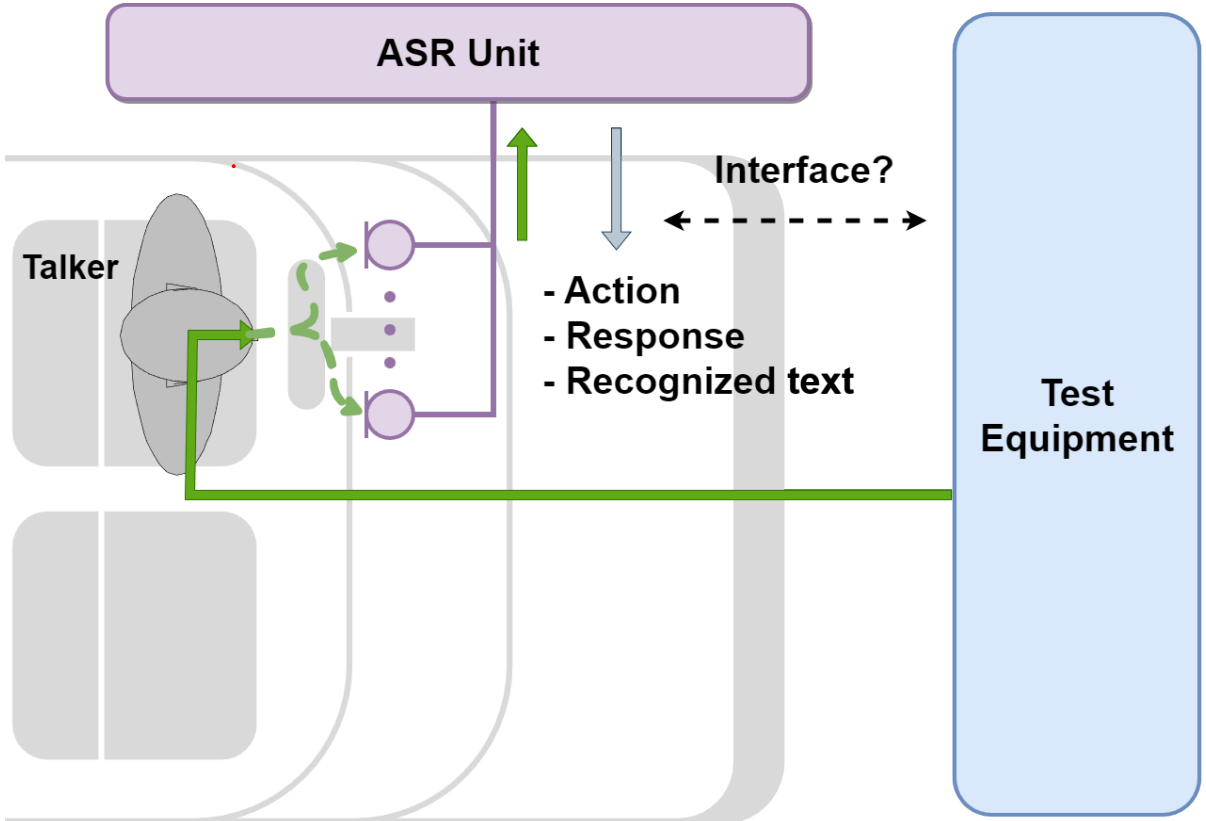

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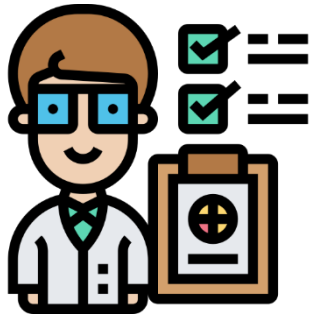

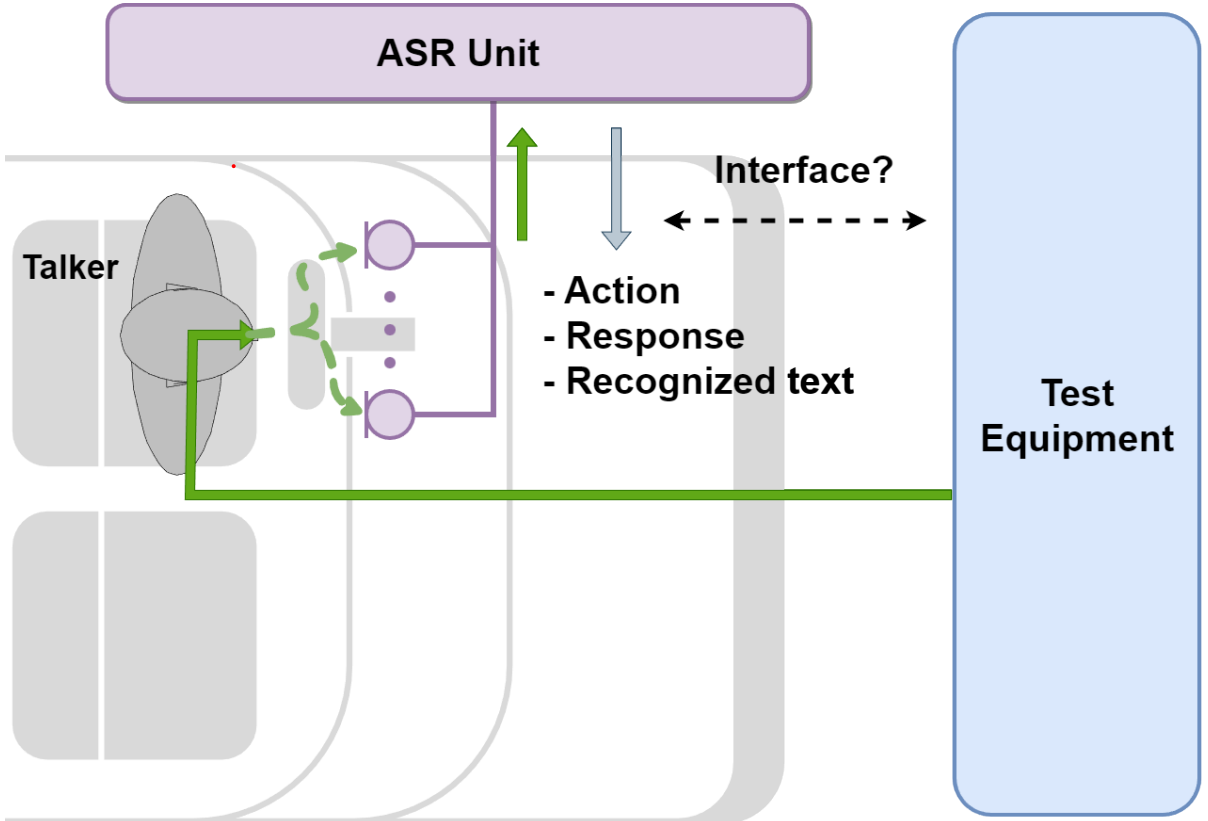

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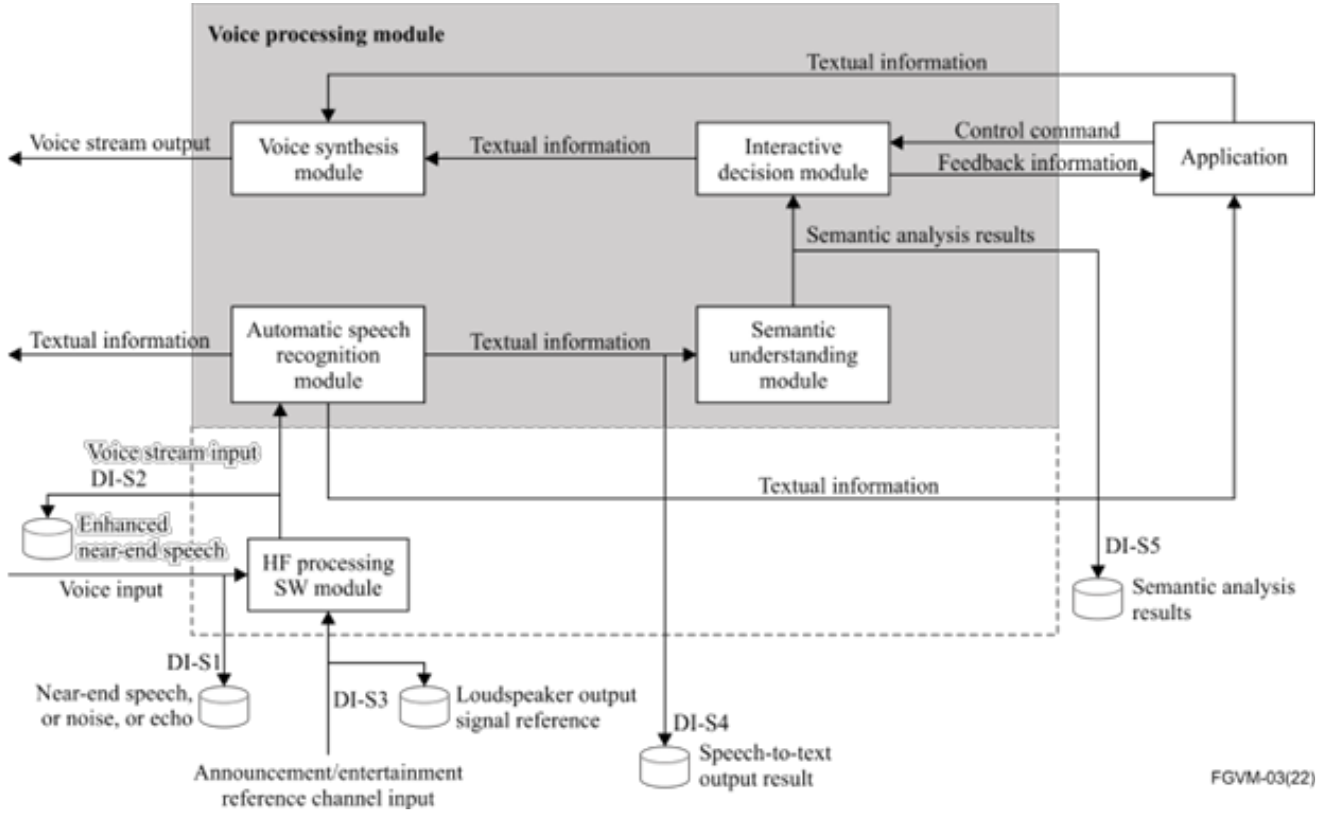

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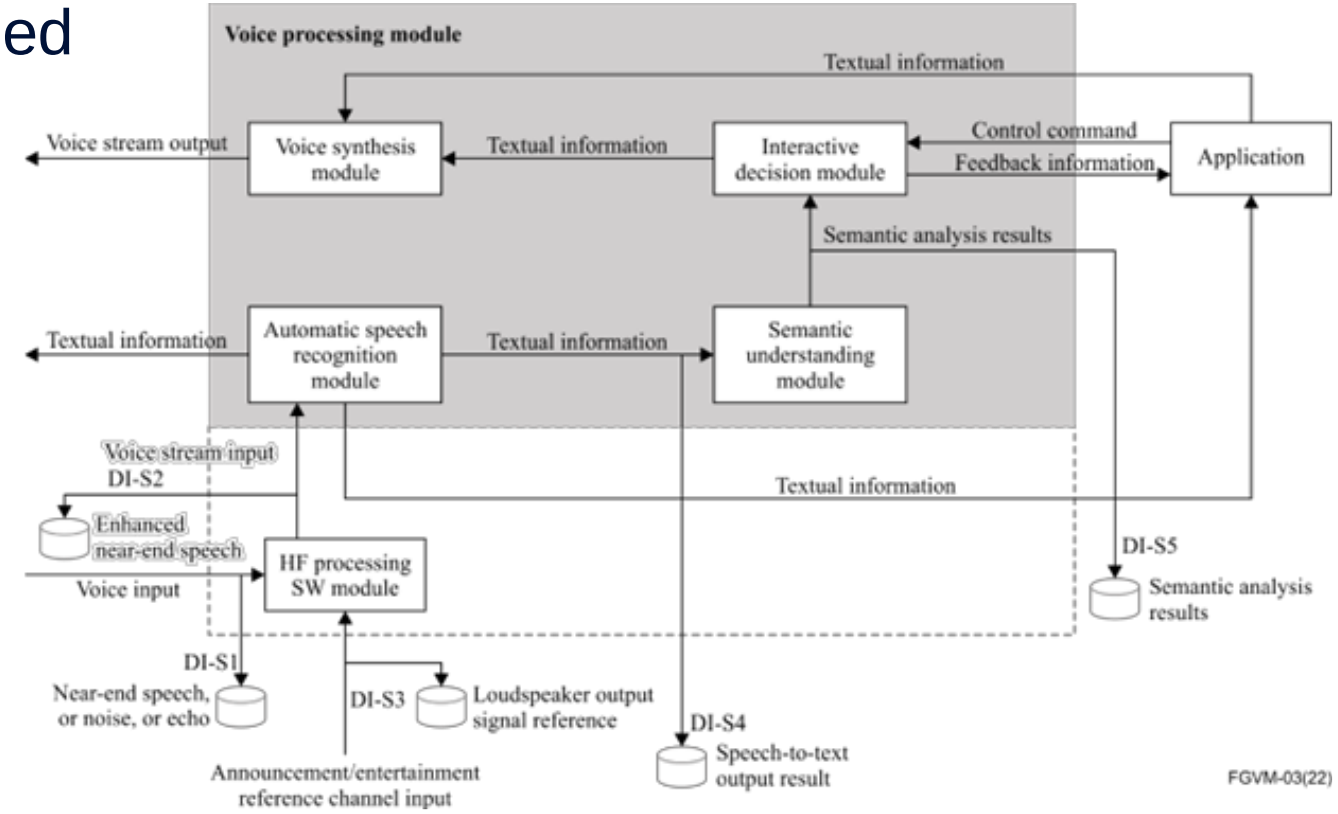

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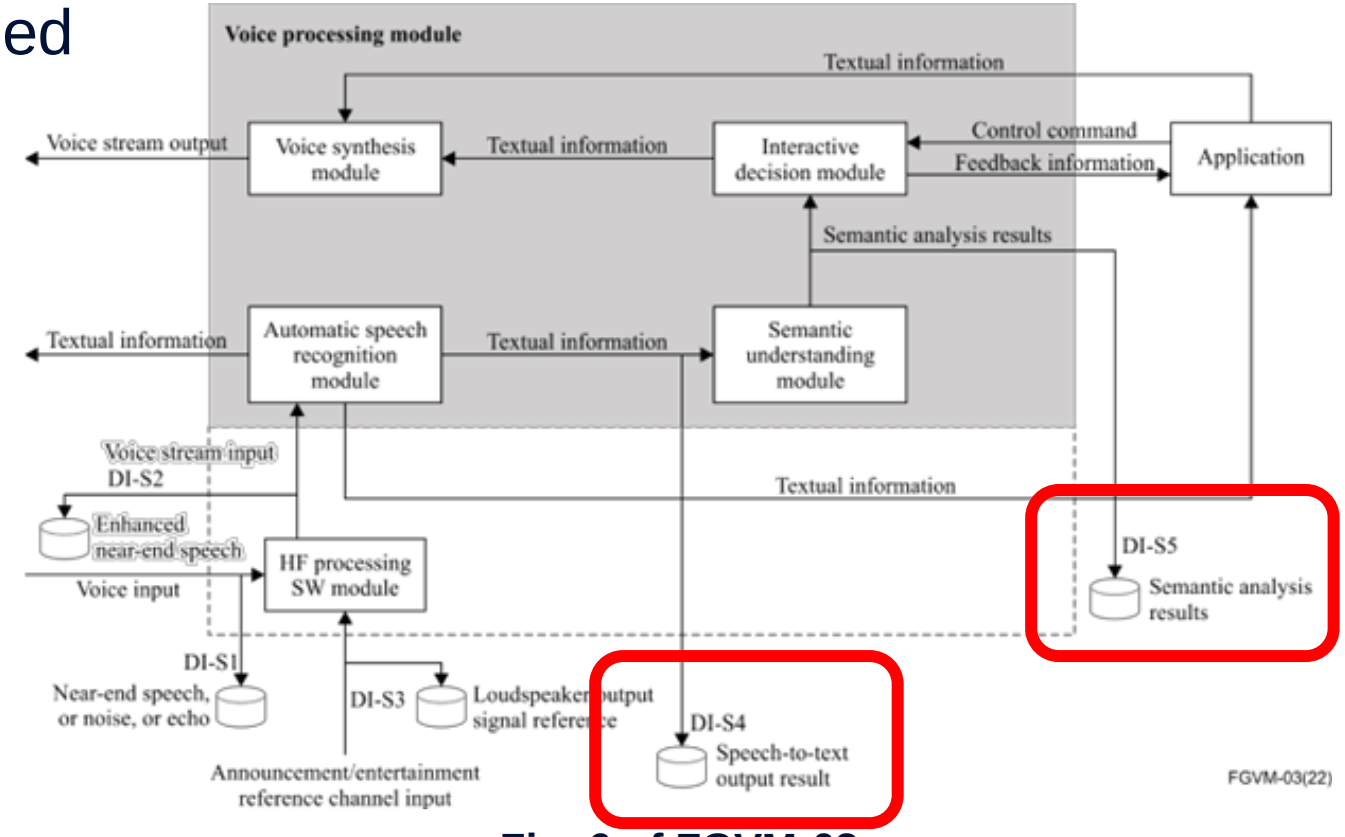

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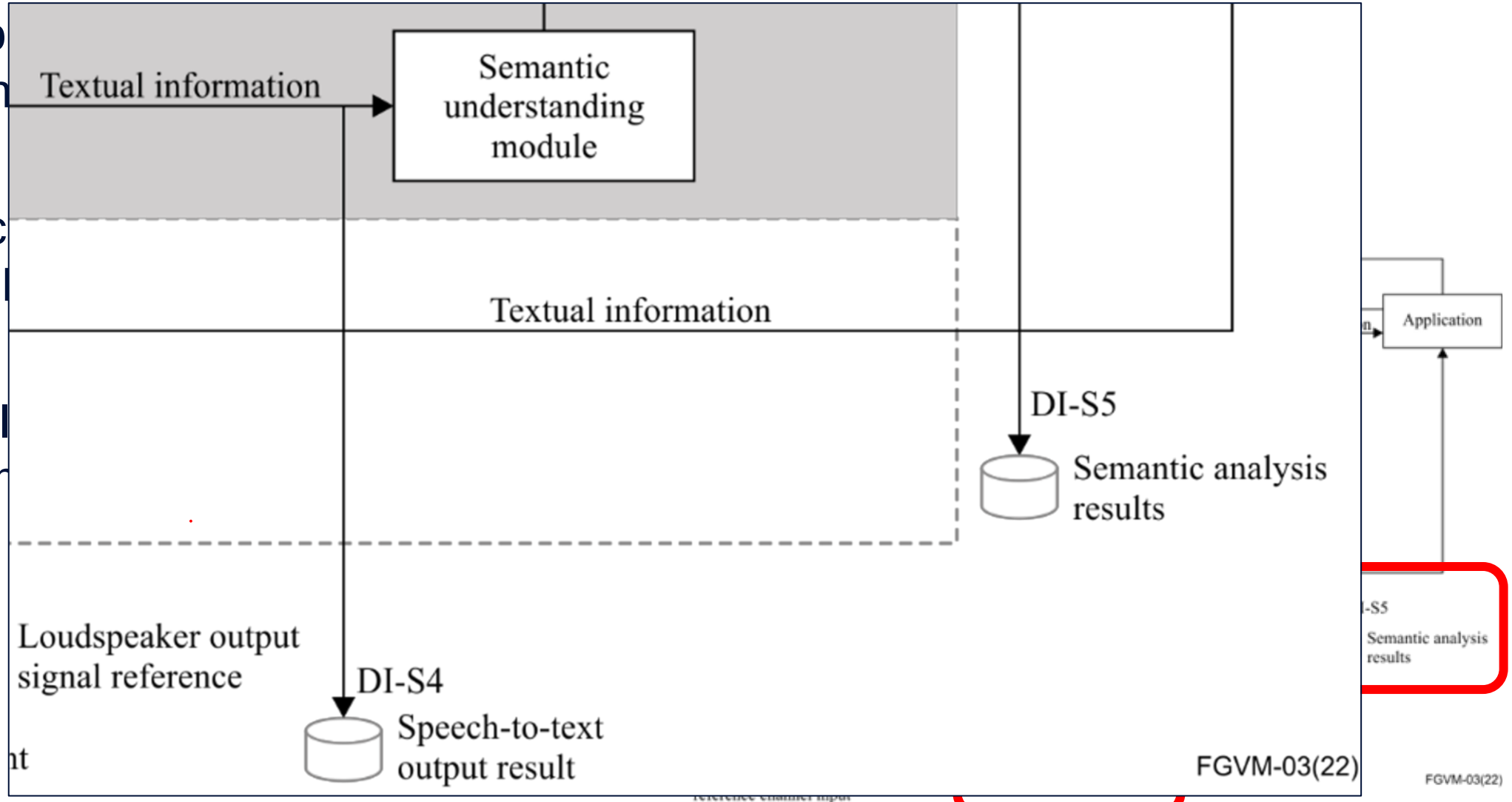

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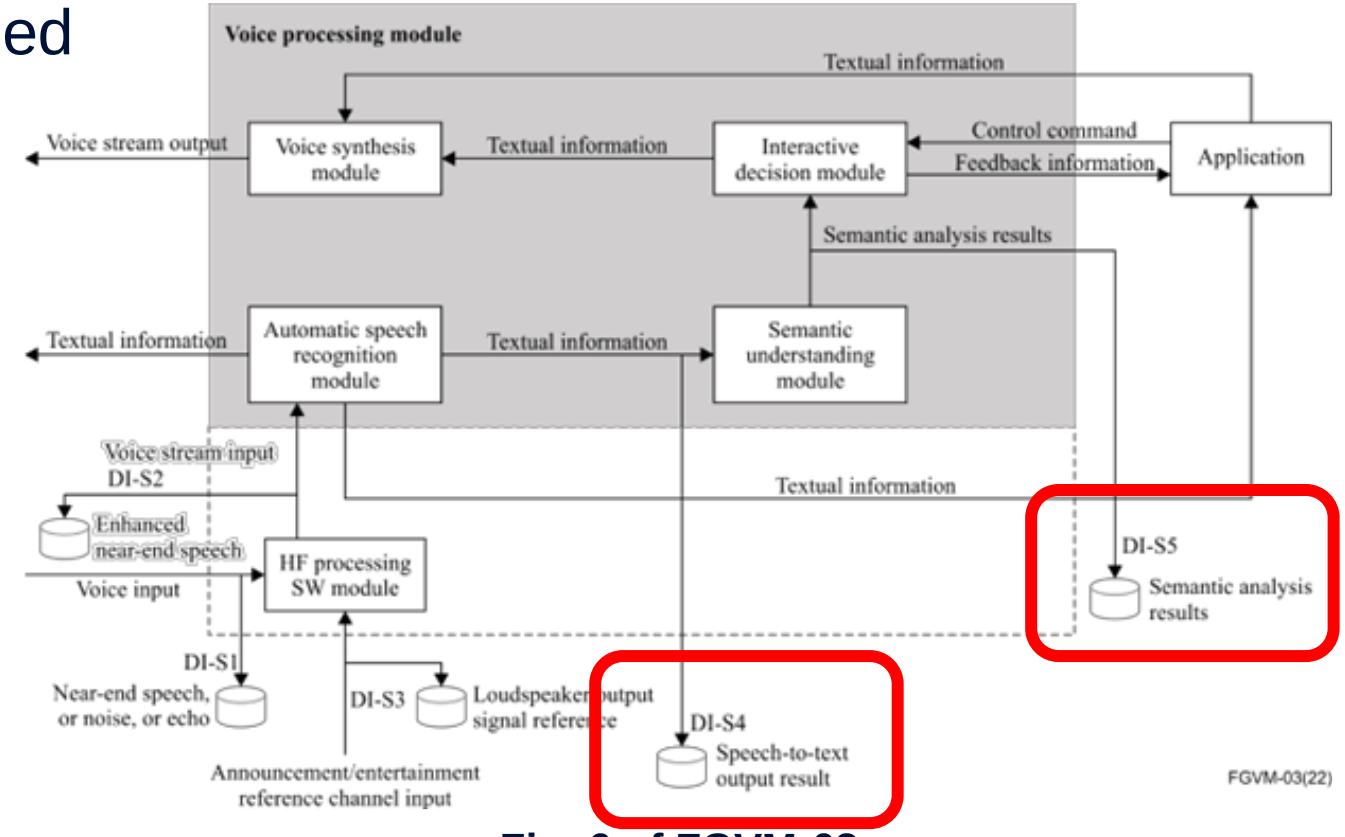

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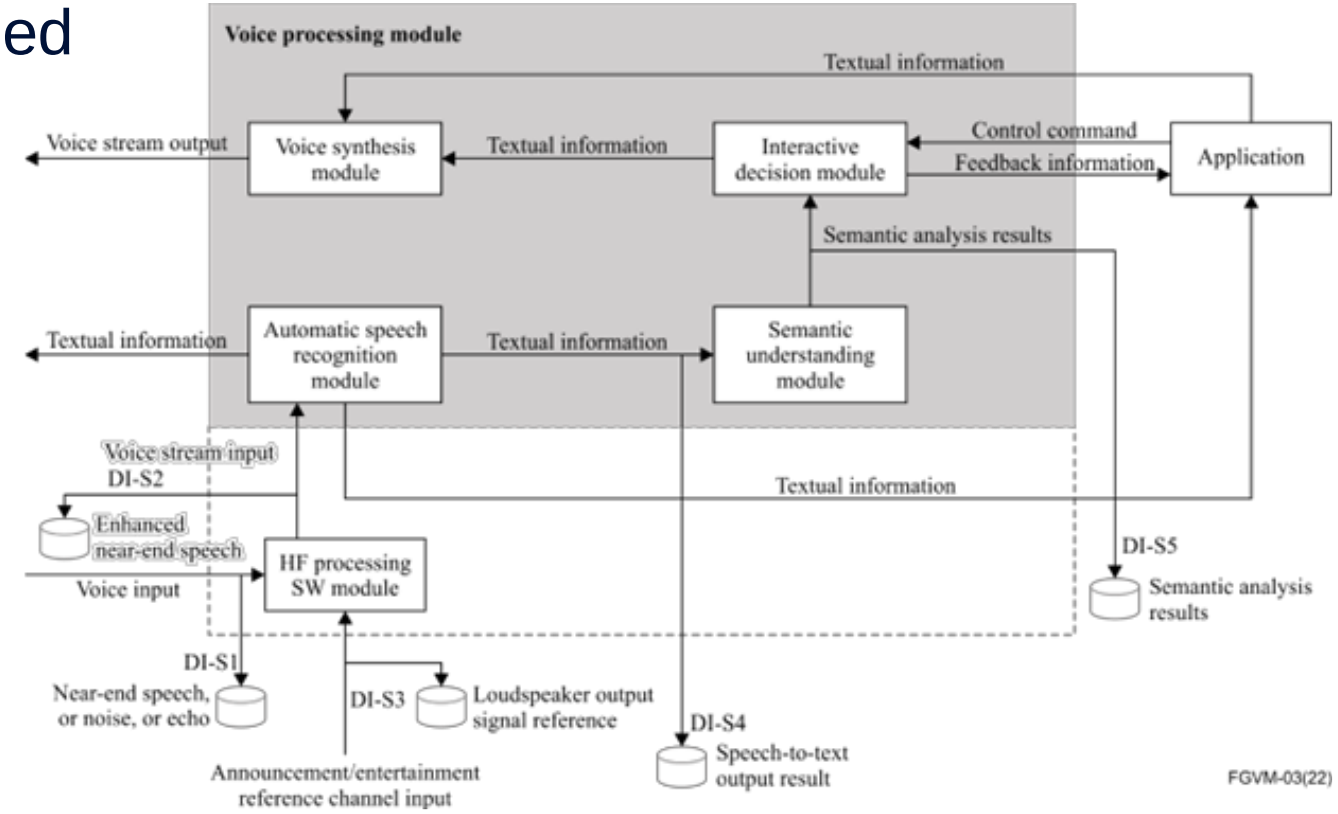

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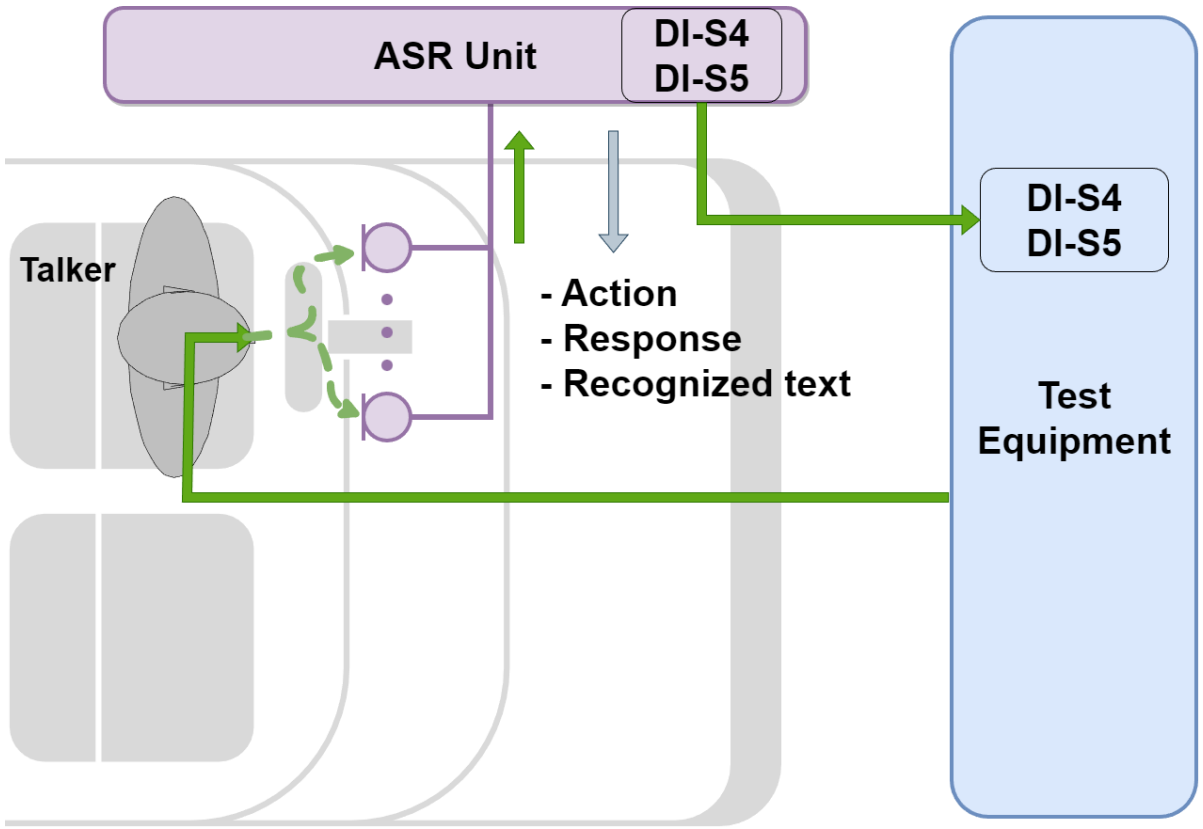

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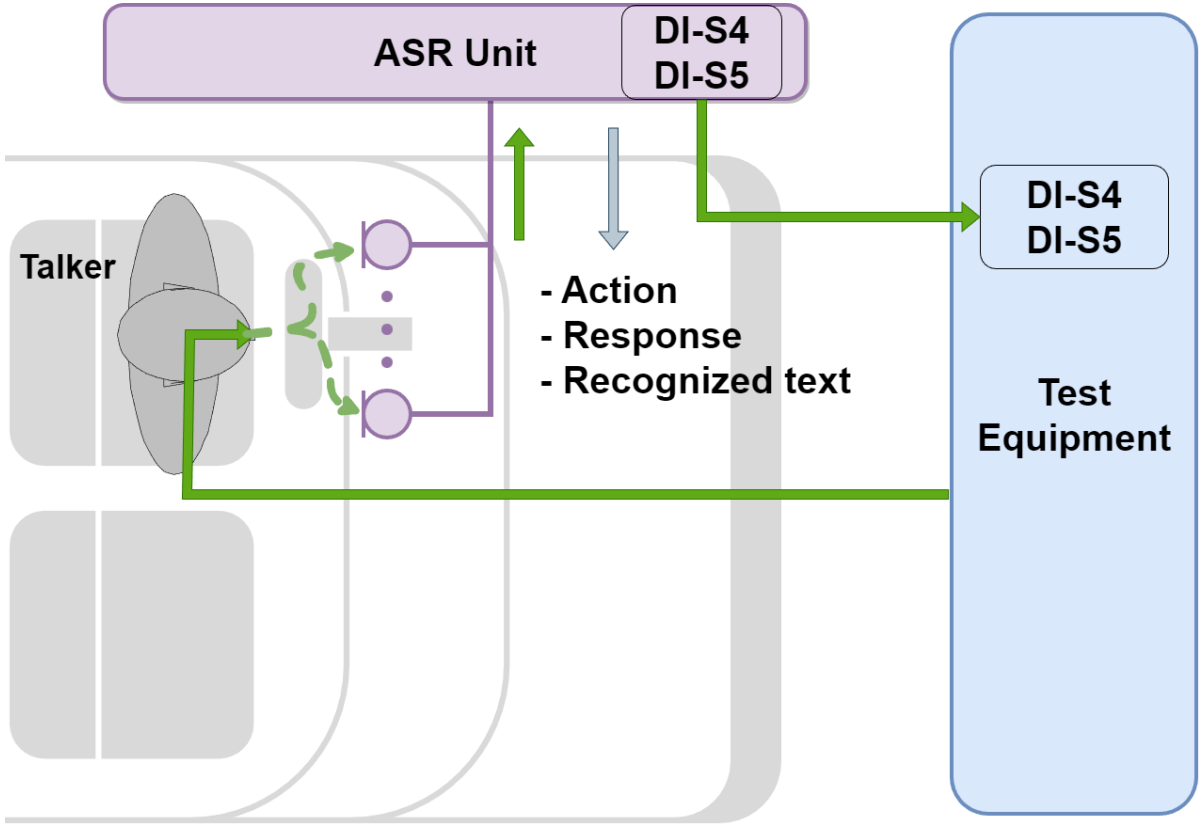

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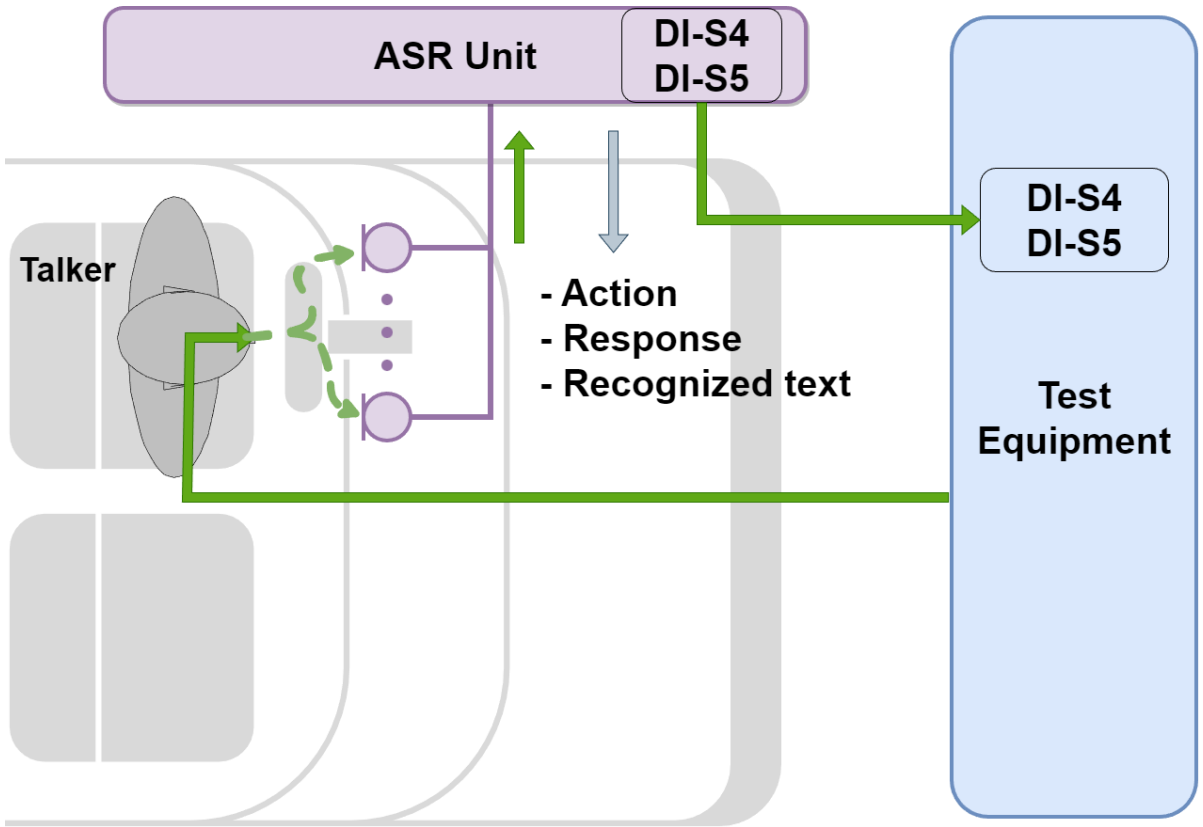
- Signal-based DIs:
  - Simulated acoustical insertion
  - Offline testing/qualification of systems



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- H.VM-VMIA should complement existing Recommendations P.1100-1150, cross-check on possible redundancy/contradictions

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