EXTENDING AGILE PRACTICES IN AUTOMOTIVE MDE

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EPS - Electronic Propulsion Systems
Existing Process

System design → Model-in-the-loop → HW-in-the-loop → Car-in-the-loop

Signal database
Frequency : Hz
Memory : b
Existing Process

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Diagram: Systems flowchart and block diagrams.
Existing Process

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Existing Process

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Overall a waterfall process

Pockets of agile MDE
Which are the challenges and possibilities for extending agile practices?
Method

Challenges:

2 independent sets of interviews  8 + 8
Engineers at EPS
Independent analysis of each set
Comparing analyses
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Possibilities:
1 follow-up interview
System architect
Challenges: Freezing

System design

Model-in-the-loop

HW-in-the-loop

Car-in-the-loop

Just in case:
Define extra signals
Include some extra bits of memory
Possibilities: Agile MDE

System design → Model-in-the-loop → HW-in-the-loop → Car-in-the-loop

- Add signal.
- Tool checks compatibility
- Allow over-specification of signals
- Verify and validate signals
- Tidy up signal database
Conclusion & Future work

System design is not in conflict with agile MDE, it is the waterfall process.

MDE enables agile development
- Model-in-the-loop
- Hardware-in-the-loop
- Car-in-the-loop

Next step is to implement the necessary tool changes.