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EDG²E
Equipment for Dual frequency Galileo GPS and EGNOS

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EDG²E
next generation gnss receiver

EDG²E : Equipment for Dual frequency Galileo GPS and EGNOS

next generation gnss receiver

The Customer

European
Global Navigation
Satellite Systems
Agency

The Team

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ATR
PROPELLING THE NEXT CONNECTION

ThalesAlenia Space
a Thales / Leonardo company

DASSAULT AVIATION

dgac DSNA

AKKA TECHNOLOGIES

The contract (48 months)

- Phase 1
  - Receiver Architecture, Architecture Trade Offs
  - Receiver SW developments, Testing Tools
  - Standardisation and Dissemination
- Phase 2
  - Receiver Delta Design, Development, Testing Tools
  - Flight Tests
  - Standardisation and Dissemination

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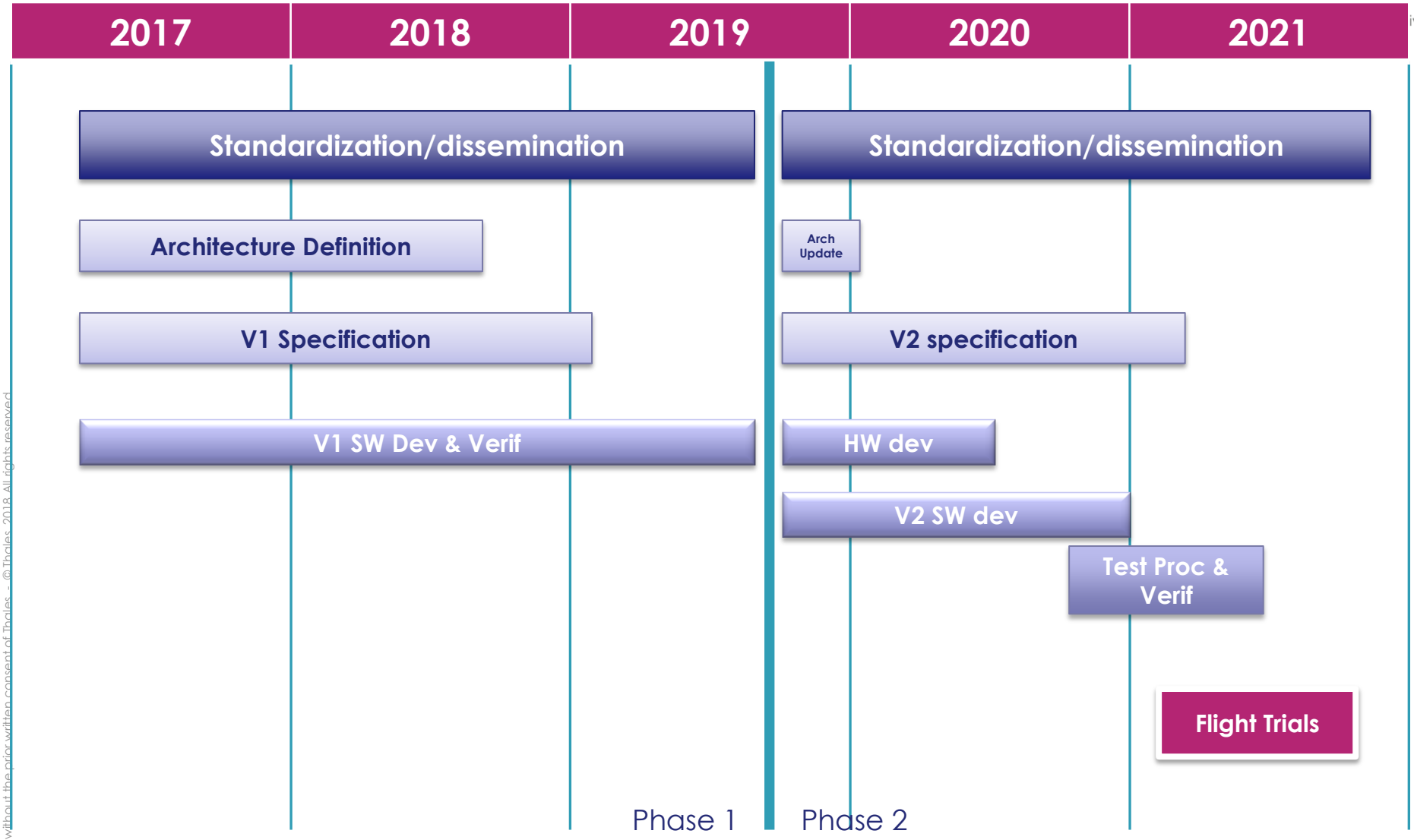
Schedule



EDG²E Phase 1 Main Results

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SBAS L5 message generation tool

- In association with a SW receiver
- to validate reception/processing/use of DFMC SBAS correction and integrity data
- ➔ feedback on MOPS requirements plus test results provided for SARPS validation

Specific Studies

- Minimal tracking capabilities
- Inter correlation and robustness to cross correlation
- Mitigation of false lock for BOC(1,1) side peaks

Preliminary evaluation of scintillation robustness

Receiver preliminary moding ➔ submitted to Eurocae WG-62

Study on Galileo Almanach accuracy and degradation for TTFF compliance

Signal Processing definition for HW design and Rx architecture

Publication by EUROCAE of the ED-259, initial version of the SBAS DFMC GPS GALILEO MOPS

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EDG²E : Phase 2

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Development of a SBAS DFMC prototype and Flight tests

- HW platform
  - RF front end
  - Processing platform
- Non SBAS integrity schemes
- Interference mitigations
- Flight test : Proof of adequacy for approach phases
- De-risking and preliminary design for the final Receiver development.
- Validation of the MOPS

Standardisation

- Pro active role in SBAS DFMC MOPS development
  - EUROCAE & RTCA collaboration

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Thales GNSS Product Road Map

next generation gnss receiver

Road Map main Drivers

- Use Galileo as soon as available (pending 2020 FOC)
- Use SBAS DFMC as soon as possible (pending 2025 FOC)
- Serve Aviation plus other safety critical applications (Drones, Rail)

The Corner stone of the road Map : a Generic, Low Swap, GNSS receiver

- First use as a SBAS L1receiver, when no Galileo nor SBAS DFMC is available
- Then upgrade to SBAS DFMC receiver

After the end of EDG²E

- Stabilisation of EUROCAE/RTCA MOPS
- Publication of ETSO
- Industrialisation of the EDG²E receiver

Conclusions

next generation gnss receiver

EDG²E project is key to provide EGNOS V3 receivers for Aviation

- ➔ Prototype SBAS DFMC receiver with performances validated by Flight tests
  - The receiver is also a validation tool for the standards under development
  - The prototype is ready for industrialisation
- ➔ Regulatory framework for the receiver development
  - Support for the SBAS DFMC MOPS development

Other elements are required for final development of the User Segment

- SARPS and MOPS must be complemented by ETSOs
- Current DFMC CONOPS must be extended to boost SBAS DFMC adoption
  - Provide operations with Lower Decision Heights

Safety of Life applications other that aviation will benefit from EGNOS V3

We need your feedback

Take the Survey on www.edge-gnss.eu

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