Spacecraft Aircraft Launcher TWG

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Content

✓**Progresses in the field :**

- **Services**
- **R&D activities**
- **Coordination**

✓**Future:**

- **Harmonisation through SEENoTC**
- **Space Agencies programmes**
- **SSA**

✓**Conclusion**

Progresses in the field:

European Space environment Services

Spacecraft:
• SWENET– continuation supported by ESA.
• GEISHA – continuation supported by CNES
• MuSTAnG – In development (in preliminary operation).
• SAAPS – interrupted – under discussion.
• SEIS – continuation at ESOC for s/c op support (SEISOP).
• SESS – in development?

Aircraft:
• SOARS – running
• Sievert – supported by FCA (F).
• QARM– supported by QQ (UK).
• AVIDOS – supported by ARCS

Launcher:
• CLS support

Progresses in the field:

R&D activities

• ESA space weather modules study (in preparation).
• ESA support to SWENET (maintenance). ESA study of nano sat beacon for space weather (completed)
• ESA plasma monitor development
• ESA radiation monitor developments (incl. EPT, proba-2 instruments).
• ESA space environment models development (e.g., SEPEM, MEO-GEO, etc,,,)
• ESA/DLR dosimetry in ISS. CNES radiation and plasma detectors development
• CNES/ONERA IPSAT (virtual observatory, goes, lanl, npoes)
• CNES/CLS: solar flare prediction model.
• CNES/ONERA: Salammbo developments.
• Astrium/SSTL, QinetiQ radiation detectors developments
• INTA solar particle event forecast model
• EC: SOLTERA, Real time database of neutron monitor observations, other?

Progresses in the field:

Coordination

- SEENoTC:
  - Scope includes SW effects on s/c (except debris, drag)
  - Members include: B, F, G, E, S, UK.
  - Review activity plans and compile requirements.
  - Radiation monitor workshop (2007, 2008)
  - liaise with CTB/RWG, SPINE, SWWT
- ISES:
- COSPAR
  - COSPAR/PRBEM
  - COSPAR/PSW
- Standards
  - -ISO (space environment, testing of ESD on SA)
  - -ECSS (E-20-06, E-10-04).
- COST
  - - COST 724 completed
  - - New COST to start end of year 2008.

Future:

- Increased coordination through SEENoTC.
- Several radiation environment monitors are flying and more are foreseen on Galileo IOD.
- Opportunities with Galileo evolution programme.
- Various proposals in response to an internal call for GSTP-5 IOD and BB including:
  - (BB) Next Generation Radiation Monitor
  - (BB) Flexible Standard Plasma Monitor
  - (IOD) Space Environment Effects on New Technologies Mission
  - (IOD) Trajectory Analyzer for Hypervelocity Particulates
  - (IOD) Space Based Technologies for Space Weather Applications
- SSA programme preparation.
- ESERO
- CNES Taranis, Robusta, VIMANA
- INTA OPTOS satellite

Conclusion

- ✓Many activities in the field
- ✓But SAL TWG itself not very active
  - web site?
  - mailing?
  - common proposals?
- ✓Increasing coordination through SEENoTC
  - especially on s/c
- ✓SAL TWG has a role to play:
  - preparing recommendations to SEENoTC
  - coordinating across the aircraft, spacecraft, launcher sector