

R&D at CNES on SPIS

Denis PAYAN

SPIS Development



- 2009 : Study of the feasibility of a SPIS GEO by ARTENUM (TBF).
- 2010 : nothing planned
- SPIS is now approved at CNES, developments are made in agreement with ESA through different founding (direct, ARTES, ..)

SPIS Study



- SPIS is applied for S/C interaction study
 - Microscope, Taranis (TBC)
- SPIS is also used more and more to understand experiments in plasma devices and vacuum chamber.
- There is need for equipment modelling like SADM, TWT (Traveller Wave Tube).
 - Charge of thick dielectrics, Electric field in a box, electric field enhancement, discharge condition, plasma expansion, arc ignition
- ESD modelling

SPIS comparison



- SPIS was compared to Muscat
- SPIS will be compared with SPARCS (THALES) and NASCAP (ASTRIUM) if R&D agreed
 - GEO spacecraft.
- SPIS modelling of the influence at large scale of very resistive dielectrics. SPIS is a link between experiment in small vacuum chamber and effect on S/C.

NEED



- Structure around SPIS improvement
 - Training, Hot line, WEB, community
 - Modelling capability in France
- Modelling of equipment