

*Space Weather:
Elaboration of European Tools (SWEET)
Proposal for EU 6th-Framework Program*

*Evaluation results of SWEET
&
Re-defined "SWEET-2" proposal*

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SWEET & SWEET-2

Contents:

- SWEET and its evaluation
- What did we learn?
- How to respond to the next call?

• **SWEET**

- "STREP" Proposal submitted to FP6 for the 'Aeronautics and Space' priority in March 2003
- 30 months starting in January 2004
- coordinated by FMI
- 18 institutes and companies
- total budget: 4Meuros; request from EU: 2.5 Meuros
- Evaluation info on June 13, 2003: SWEET is unfortunately not recommended for funding

SWEET Philosophy:

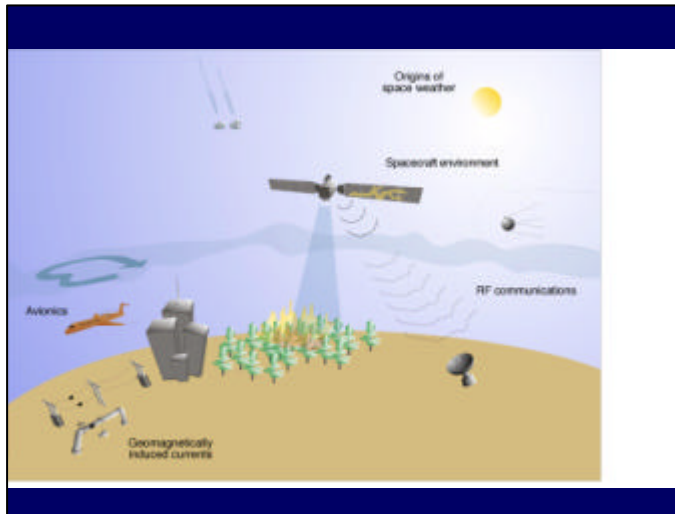
Responding to the GMES Risk Management Call, SWEET's objective was:

"to ensure that the Risk Management Centre will be able to operate and provide the services to its end users, and consequently, to minimize the Space Weather Risk for the services "

=> For the Risk Management Centre:

"Space Weather Risk " = "Satellite Environment" + "RF Communication "

Other space weather areas, avionics & ground effects, were also included



SWEET Work Packages:

- altogether 44 WPs (including sub-WPs)
- five main WPs:
 - Management (FMI, Finland)
 - Origins of Space Weather (UCL, UK)
 - Spacecraft Environment (LPCE, France)
 - RF Communication (SRC, Poland)
 - Societal Impact (FMI, Finland)

Evaluation summary of SWEET

- **Relevance 4/5** (threshold 3/5)
- **Potential impact 3/5** (threshold 3/5)
- **S & T excellence 3/5** (threshold 4/5)
- **Quality of the consortium 2/5** (threshold 3/5)
- **Quality of the management 2/5** (threshold 3/5)
- **Mobilisation of the resources 3/5** (threshold 3/5)
- ==> **TOTAL 17/30** (threshold 21/30)

Specific remarks from the evaluation summary of SWEET

- Dissemination and exploitation plans not clearly defined
- Relations with on-going ESA and COST activities not clearly defined
- Solar monitoring from space is an important aspect.
- SMEs' and sub-contractors' roles not clearly defined
- Additional experts on risk modelling and space physics to be included
- Workplan highly fragmented, too many deliverables for a 30-month project
- Decision-making structure not convincing, organising board meetings every 3 months not appropriate to run the project
- WP 1000 and WP 2000 to be funded by ESA

SWEET

- Four main branches
 - WP1000: Origins of Space Weather (solar physics)
 - WP2000: Spacecraft Environment (Charging, SEU, Drag)
 - WP3000: RF Communication
 - WP 4000: Societal Impact (GIC, Avionics, USA & ESA & COST collaboration)
- Goal: “An operational service to support a larger GMES risk centre”

Dec 17, 2002 – Mar 19, 2003: Constructing SWEET

- Space weather is a generic risk ==> A wide consortium was established.
- WPs were written.
- GMES ‘fine-tuning’ (emphasis on WPs 2000 and 3000)
- Extreme democracy: Practically all suggested WPs were included in the proposal!
- The goals and philosophy were established.

June 30, 2003 – Mar 2004: Construction of SWEET-2

- 2nd Call Publication end- 2003 ” Risk Management” e.g. Space Weather
- ”Global Monitoring for Environment and Security, GMES,” philosophy still valid
 - FMI will coordinate SWEET-2 following evaluation results
 - Other applications also?

SWEET-2 should avoid the weaknesses of SWEET:

- “Objectives clear but the utilisation and upgrading of existing capabilities not”
- “Positioning with respect to ESA and COST activities not clear”
- “Dissemination plans and exploitation not clearly defined”
- “WPs 1000 (Origins of SW) and 2000 (Spacecraft Environment) should be considered to be funded by ESA programs”
- “Workplan fragmented and too many deliverables”

Continuation in the path of SWEET: Option 1:

- Keep all main branches, but cut sub-branches significantly
- Each branch will be coordinated with an ESA SDA (examples):
 - WP1000: “Solar Influences Data Centre” (SIDC)
 - WP2000: SHAFT (QinetiQ) or GEISHA (ONERA)
 - WP3000: “SW impact on positioning...GNSS” (DLR), “Quickmaps of Scintillation...” (CLS) or “Ionospheric Forecasting” (BAe systems)
 - WP4000: “Auroras Now!” (FMI)
- Pro: Existing capabilities known, dissemination together with SWENET
- Critical point: EC funding activities which should belong to ESA (WP 1000, 2000)
- Question: How to implement COST 271 and 724?

Continuation in the path of SWEET: Option 2

- Concentrate only on WPs 3000 (RF Communication) and 4000 (Societal Impact)
- Recommendations (e.g. solar wind monitor specification) to ESA (WPs 1000 and 2000)
- The SDAs on GIC and ionospheric effects and COST 271 could be used as starting points
- Pro: Ionospheric and ground effects coupled, which enables a more compact application
- Con: European Space Weather activities remain fragmented, GMES emphasis not so strong (WPs 2000 satellite not included < ---> 3000 RC Communication)

Thanks for your contributions!

