



2013
SPENVIS
User Workshop

22-24 May
Brussels

Welcome to SPENVIS User Workshop 2013



- **SPace ENVironment Information System**
 - Software of the European Space Agency (ESA)
 - WWW interface to models of the space environment and its effects
 - First public release in 1998
- **Workshop Goals**
 - Bringing SPENVIS users together to share their experiences
 - Presenting new and forthcoming developments of SPENVIS
 - Better identifying SPENVIS user requirements.
- **Fifth edition**
 - 2002 (Noordwijk)
 - 2005 (Leuven)
 - 2006 (Pasadena)
 - 2010 (Mechelen)



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SUW 2013 Context



www.spennis.oma.be

SPENVIS
The Space Environment Information System

NAVIGATION

- Home
- Access
- Register
- About SPENVIS
- Documentation
- Credits
- Rules of conduct
- My account
- Forums
- Bug tracker
- Lost password

SPENVIS User Workshop 2013
Brussels, Belgium
22 - 24 May 2013
[Click here for more information](#)

Welcome to **ESA's** Space Environment Information System, a WWW interface to models of the space environment and its effects, including the cosmic rays, natural radiation belts, solar energetic particles, plasmas, gases, and "micro-particles".

Space Situational Awareness
In the framework of ESA's SSA Preparatory Programme, the version 4.6.4 of SPENVIS has been re-deployed in Redu Data Centre.

Need help?
Beside a large set of contextual help pages, the SPENVIS system includes a forum (F) where users can exchange their experiences and tips. In case of problems, please consult our bug tracker system (B) and feel free to post any bugs.

If you have forgotten your password, you can reset it [here](#). If you want to change your password, you can do it [here](#).

Project Manager: Michel Kruglanski
Application Engineers: Erwin De Donder & Nicosytos Messios
IT development: Emmanuel Gandy, Laszlo Hetey & Stijn Calders
Contact: spennis_team@aeronomie.be
ESA Technical Officer: H. Evans

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swe.ssa.esa.int

esa space situational awareness

ESA SSA SWE NEO SST

About SWE

- What is Space Weather
- SSA Space Weather Activities
- Current Space Weather
- Service Network
- Data Centre
- Service Centre

User Domains

- Spacecraft Design
- Spacecraft Operation
- Human Space Flight
- Launch Operation
- Transionospheric Radio Link
- Space Surveillance and Tracking
- Non Space Systems Operation
- General Data Service

Services

- Expert Service Centres**
 - Solar Weather
 - Space Radiation
 - Ionospheric Weather
 - Geomagnetic Conditions
- Federated Services**

Spacecraft Design

Spacecraft need to be designed optimally to withstand the harsh environments in which they're expected to function for up to 20 years. Both cumulative effects over the planned lifetime and the short-term effects of single events need to be considered. New technologies may be found to be particularly vulnerable to Space Weather hazards so it is important to characterise them as completely as possible, and environment and effects tools can complement experimental work and testing.

More ...

SPENVIS
The Space Environment Information System

SEDAT

Environment models and Effects tools

www.spennis-ng.eu

esa **Next Generation SPENVIS**
ESTEC Contract No. 4000104812

Consortium

Contact

Public documents

Links

The Space Environment Information System (SPENVIS) had been under continual development since 1996 for ESA by BIRA, providing the world community with an on-line resource for evaluating the space environment. SPENVIS-4 is a World Wide Web based interface to a comprehensive set of models of the space environment. It has been operational for more than ten years now and has a mature international user community of about 2000 registered users who use the system for various purposes, e.g. mission analysis and planning, educational support, and running models for scientific applications.

Within the ESA/GSTP-5 programme, funding has been provided for the development of a next generation of this resource. The informatics technology available today has evolved considerably from what was state of the art in 1995, where web servers were limited to basic html pages and cgi-scripts. Within the scope of this development the framework and models of the SPENVIS system will be reviewed, restructured and reengineered using current web design techniques and programming methodologies, providing a new, extensible and open framework for the integration of current and future space environment models.

Distributed architectures for space data analysis and collaborative engineering have been investigated through several ESA activities (SAAPS, SEDAT, VISPLANET, SEPEN, REST-SIM) from which potential requirements and solutions for the SPENVIS-5 project may emerge. The advantages of a distributed approach are that the resources are acquired, developed and maintained at an "expert centre" where the competences and necessary supporting facilities reside and are available as needed by a "coordination node" in response to end-user needs and in compliance with any access restrictions that may apply. The new system is foreseen to be operated in the context of ESA's SSA programme.

Consortium

Contact

- Prime contractor: Michel Kruglanski (BIRA)
- ESA technical officers: David Rodgers & Hugh Evans (TEC-EES)

deimos SPACE

DH CONSULTANCY

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- Six sessions
 - SPENVIS in general — Wed 22 May PM
 - Space Radiation Environment — Wed 22 May PM
 - GEANT4 Tools — Thu 23 May AM
 - Single Event effects — Thu 23 May PM
 - Spacecraft Charging — Thu 23 May PM
 - Miscellaneous — Fri 24 May AM
 - Discussion / Round-up
- General session logic
 - One highlight talk
 - One tutorial talk
 - Few use cases
- Posters



SUW 2013

Workshop organisation & preparation

- Steering Committee
 - M. Kruglanski, H. Evans, E. Daly, D. Rodgers
- Local organising committee

Stijn



Sophie



Erwin



Ablaye



Laszlo



Neophytos



Workshop social event

- Starting from the Royal Library at 17:30

...with a guided tour

...to show you Brussels

....as you have not yet seen ?



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SUW 2013

Wednesday 22 May

Session 1: SPENVIS in general

13h30-13h40:	Welcome	M. Kruglanski (BIRA- IASB)
13h40-14h00:	ESA perspectives	E. Daly (ESA/ESTEC)
14h00-14h45:	Overview of current and future SPENVIS and Organization Tutorials	M. Kruglanski (BIRA- IASB)
14h45-15h05:	European Cooperation for Space Standardization (ECSS)	E. Daly (ESA/ESTEC)
15h05-15h20:	Coffee break	

Session 2: Space Radiation Environment

15h20-15h50:	AE9, AP9, and SPM: New Models for Radiation Belt and Space Plasma Specification	S. Huston (Aer Inc.)
15h50-16h35:	Tutorial: Radiation models in SPENVIS and their accuracy	D. Heynderickx (DH Consultancy)
16h35-16h55:	A comparison between high-energy radiation background models and SPENVIS trapped-particle radiation models	J. Krizmanic (Universities Space Research Association)
16h55-17h15:	Numerical estimation of Galactic Cosmic Ray (GCR) exposure in space - An Investigation of GCR models and shielding effects	A. I. Mrigakshi (DLR - German Aerospace Center)

