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)
SUW 2013 Context

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-NG 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/OSTP-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 1996, 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, VISIPASI, SEPHI, REST-SIM) from which potential requirements and solutions for the SPENVIS-NG project may emerge. The advantages of a distributed approach are that the resources are acquired, developed and maintained at an “expert centre” where the competence and necessary supporting facilities and data 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 ESA programme.

Consortium

BIRA

Contact

* Prime contractor: Miroslaw Kupiński (BIRA)
* ESA technical officer: David Rogers & Hugh Evans (TEC-ESR)
SUW2013
Workshop Programme

• 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
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 ?
**SUW 2013**  
**Wednesday 22 May**

### Session 1: SPENVIS in general

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>13h30-13h40</td>
<td>Welcome</td>
<td>M. Kruglanski (BIRA-IASB)</td>
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<tr>
<td>13h40-14h00</td>
<td>ESA perspectives</td>
<td>E. Daly (ESA/ESTEC)</td>
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<tr>
<td>14h00-14h45</td>
<td>Overview of current and future SPENVIS and Organization Tutorials</td>
<td>M. Kruglanski (BIRA-IASB)</td>
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<tr>
<td>14h45-15h05</td>
<td>European Cooperation for Space Standardization (ECSS)</td>
<td>E. Daly (ESA/ESTEC)</td>
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<td>15h05-15h20</td>
<td>Coffee break</td>
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### Session 2: Space Radiation Environment

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