Holding a technical review in an educational project: implementation and lessons learned for the OUFTI-1 CubeSat

A. Denis, J. Wertz, J. Pisane, G. Kerschen
University of Liège, Belgium
Liège, Belgium
Outline

1. Context
2. Why a review?
3. Method and implementation
4. Evaluation
5. Conclusion
1. The OUFTI-1 project

CubeSat standard  VEGA Maiden Flight  Three payloads

2 universities + 2 engineering schools
2. Problem: fuzzy interfaces

Interface Technical Review (ITR)
3. Starting point: ECSS standard

ECSS-M-ST-10-01:
Space Management – Organization and conduct of reviews

Review = snapshot of the technical status

- Initiation of review
- Preparation and distribution of data-package
- Review of documentation:
  1. Review Item Discrepancy forms (RIDs)
  2. Collocation meetings
- Findings and conclusion
3. Adaptation of ECSS to our project (1)

Initiation of review

Preparation and distribution of data-package

Review of documentation:
1. Review Item Discrepancy forms
2. Collocation meetings

Findings and conclusion

- Students
- Interfaces
- Industrialists
- Academics
3. Adaptation of ECSS to our project (2)

Entities:

<table>
<thead>
<tr>
<th>ECSS</th>
<th>OUFTI-1 project</th>
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</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Project manager</td>
</tr>
<tr>
<td>Supplier</td>
<td>Students in charge of subsystems</td>
</tr>
<tr>
<td>Consumer</td>
<td>(Entity not used)</td>
</tr>
<tr>
<td>Review authority</td>
<td>Professor in charge of project</td>
</tr>
<tr>
<td>Review team</td>
<td>System engineering team</td>
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<tr>
<td>Review team leader</td>
<td>Member of system engineering team</td>
</tr>
</tbody>
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+ panels
3. Practical implementation

- **T=0**
  - Initiation of the review

- **T +31 days**
  - Preparation of data-packages

- **T +43 days**
  - Review of documentation

- **T +50 days**
  - Collocation meetings

- **T +52 days**
  - Kick-off meeting

- **T +10 weeks**
  - Close-out meeting

- **T +11 weeks**
  - Review team report
  - Review authority report
4. Evaluation

- Initiation of review
  - Process well defined

- Preparation and distribution of data-package
  - Quality problems

- Review of documentation:
  1. Review Item Discrepancy forms
     - 145 RIDs issued
  2. Collocation meetings
     - 115 RIDs processed (in 9-hours meeting)

- Findings and conclusion
  - Interfaces finally identified
5. Conclusion

• ECSS-M-ST-10-01 Standard:
  • Originally designed for industrial application
  • Tailored to academic environment

• Review process:
  • Heavy
  • Necessary

• Great experience for all
Thank you for your attention!