



# **Space Ops Workshop Outbrief**

**SpaceOps 2010 Conference  
30 April 2010**

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JAXA**

# History of RCSGSO

- International Symposium on the Reducing Cost of Spacecraft Ground Systems and Operations (RCSGSO)

	Year	Host
1	1995	RAL, England
2	1997	RAL, England
3	1999	U. of Hainan, Taiwan
4	2001	APL, USA
5	2003	JPL, USA
6	2005	ESA, Darmstadt, Germany
7	2007	IKI, Moscow, Russia
8	2009	JAXA, Tsukuba, Japan





# RCSGSO Changes in 2009

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## Preparation Team Proposal (NASA/ESA/JAXA)

1. **Smaller meeting**                      **40-60 attendees**
2. **Workshop**                              **supports discussions**
  - ✓ 40 minutes per presentation
  - ✓ Summary at the end of each day
3. **By invitation**                              **participants with authority over funding**
  - ✓ Contribute to preparation-load reduction for the presenter
    - No abstract or manuscript
    - Full agency/industry endorsement is needed
  - ✓ Contribute to work-load reduction to the Technical Committee
4. **Minimal/no social plan**
5. **Sponsored by the SpaceOps Organization**

## ExCOM/CAL

- The team proposal was discussed and approved by SpaceOps ExCOM/CAL meeting, October 2008, Toulouse



# Track Theme & Rationale

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## Automation

- Clearly impacts the actual operations costs
- Claimed both on reduction of the mission “routine” operation manpower and on the optimisation of data return from the mission.

## Virtualization

- Virtualization will help supporting legacy missions on next generation of computers (Virtual Machines act as an isolation layer between old operating systems and new hardware).
- It is a big advantage for “long duration missions”.

## Outsourcing

- It is a subject repetitively under discussion in several space Agencies for budgetary reduction.
- Not always came to the expected results both in terms of “cost reduction” and “efficiency” of missions operations in terms of mission data return.





# Workshop Timetable

## *RCSGSO-8 Workshop Program Schedule [Preliminary]*

*26<sup>th</sup> – 28<sup>th</sup> of May, 2009  
International Space Technology Exchange House  
Tsukuba Space Center, JAXA*

	<b>25-May-09</b> Monday	<b>26-May-09</b> Tuesday	<b>27-May-09</b> Wednesday	<b>28-May-09</b> Thursday
08:30-09:00		Registration		
09:00-09:20		Opening Remarks	Registration	Registration
09:20-09:30		Session Brief		
09:30-10:15		Automation <i>ESA(1)</i>	Automation <i>CNES(2)</i>	Outsourcing <i>EUMETSAT</i>
10:15-11:00		Automation <i>NASA/JPL</i>	Automation <i>EUMETSAT</i>	Outsourcing <i>SSC</i>
11:00-11:20		Coffee Break		
11:20-12:05		Automation <i>CNES</i>	Automation <i>KARI</i>	Outsourcing <i>VEGA</i>
12:05-12:50	Registration 12:00-13:40	Automation <i>DLR</i>	Automation <i>JAXA</i>	Outsourcing <i>CNES</i>
12:50-13:45		Lunch		
13:45-13:55		Session Brief		
13:55-14:40	Site Tour 13:40-15:20	Automation <i>ESA(2)</i>	Virtualization <i>ESA</i>	Outsourcing <i>ESA</i>
14:40-15:25		Automation <i>BNSC</i>	Virtualization <i>USA</i>	Outsourcing <i>NASA/GSFC</i>
15:25-15:45		Coffee Break		
15:45-16:30	Technical Committee Meeting 15:30-17:30	Automation <i>USA</i>	Virtualization <i>VEGA</i>	Outsourcing <i>NASA/JPL</i>
16:30-17:15		Automation <i>VEGA</i>	Virtualization <i>DLR</i>	Outsourcing <i>JAXA</i>
17:15-17:45		Track Summary		
17:45-18:00	30-APR-10			Closing Remarks



# Statistical Summary

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## ■ Agency and Industry Participation

- ◆ 9 Agencies: CNES, CSA, DLR, ESA, EUMETSAT, KARI, NASA [GSFC, JPL], RAL and JAXA
- ◆ 5 Industries: Honeywell, SSC, USA, USN and VEGA

## ■ Number of Participants

- ◆ 5/26 (41), 5/27 (38), 5/28 (36)

## ■ Number of Presentations

- ◆ Automation 14
- ◆ Virtualization 4
- ◆ Outsourcing 7

## ■ Workshop Style

- ◆ Presentation (20 min) + Discussion (20 min)
- ◆ Daily Session Summary by Chair/Co-chair

## ■ Other Remarks

- ◆ No “withdraw”, No “no show”
- ◆ Full Presentation Book supported the workshop discussion



# Track Summary

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## ■ Automation

- ◆ Forces you to understand the process, must compare cost reduction vs. science return, supports risk reduction
- ◆ After process is streamlined to the maximum, automation is not for cost, but for quality improvement reason
- ◆ Cost would be too high for automation for unique science mission
- ◆ Programme/series/long duration missions facilitate automation

## ■ Virtualization

- ◆ Driver: Large and complex IT infrastructure that is difficult to maintain, with large overhead
- ◆ A technology help to increase in the independence of software/application and hardware
- ◆ Technology is leveraged from a wide variety of non-space fields

## ■ Outsourcing

- ◆ Core business and core competences considered by Agencies are not the same in all places
- ◆ Outsourcing allows you to change organizational capabilities when inertia makes internal change difficult



# Workshop Title Change

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- **RCSGSO-8 Organizing Committee forwarded their management voice to the ExCOM/CAL meeting, October, 2009, Montreal:**
  - ◆ Consider renaming the workshop
  - ◆ The workshop discussed specific themes such as automation for the operations
  - ◆ Cost Reduction is common theme not only for the Space Operations
  
- **ExCOM/CAL discussed and decided the new title**

## SpaceOps Workshop



# What's Next?

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- **Rutherford Appleton Laboratory (RAL) proposed to host the next Workshop**
  
- **ExCOM interviewed RAL representative**
  
- **Next “SpaceOps Workshop”**
  - ◆ Hosted by RAL
  - ◆ in May 2011