

# Space & Energy

**TIEMS Oslo**  
**October 22-24 2012**

Brage W. Johansen



Space & Energy is a network of technology companies, knowledge and research institutions focusing on the parallel challenges and opportunities within the space and energy sectors.


We believe the intersection and interaction between these two large industries will reveal a vast potential for competence and technology transfer that will generate new solutions and new business opportunities.



# Space & Energy events 2010 - 2012:

Several seminars and workshops in Stavanger and US.

## Workshop ONS Stavanger 2012



**Planetary Drilling Workshop 2012**  
Thursday 30 August 2012, Stavanger

As a follow-up from the Planetary Drilling Workshop we had in August last year (2011), we are happy to invite you again to this year's workshop. This time we will be more concrete on specific technologies and drilling challenges, and again our goal is to inspire to more innovation partnerships both on Earth and other places...

**VENUE:** Ipark Møltidets hus, Richard Johansengt. 4, 4068 Stavanger

**AGENDA THURSDAY 30 AUGUST:**

12:00 Lunch

13:00 1) **Welcome and Introduction by Brage W. Johansen / Space & Energy**  
There have been a couple of outstanding events and developments in the last year that may generate new tech & new business for Space & Energy

2) **Robotics for Space and Earth by SVP Dr. Kris Zacny / Honeybee Robotics, Los Angeles**  
Honeybee Robotics has an extensive portfolio of automated and sensor-intensive drilling and manipulation technologies.

3) **The NASA Icebreaker Drill by Dr. Brian Glass / NASA Ames Research Center**  
Development of the icebreaker drill, a low power autonomous drilling system, is paving the way to drilling on Mars, in the Arctic, and other extreme environments.

4) **Deep Drilling on Mars by CEO Dr. Pascal Lee / Mars Institute**  
The motivation, challenges, and strategies for deep drilling on Mars, including the latest news from the Houghton Crater test site in the Arctic and from the Curiosity rover on Mars, the establishment of Mars Institute Norway in Stavanger, and plans for upcoming years.

5) **Brainstorming and discussion on detailed subjects.**


16:00 End

**PLEASE REGISTER:** by e-mail to Brage W. Johansen: bwj@iris.no  
There is room for 40+ participants.

Space & Energy: [www.spaceandenergy.no](http://www.spaceandenergy.no)  
Mars Institute: [www.marsinstitute.org](http://www.marsinstitute.org)  
Honeybee Robotics: [www.honeybeerobotics.com](http://www.honeybeerobotics.com)  
ThinkOutsideThePlanet: [www.thinkoutsidetheplanet.com](http://www.thinkoutsidetheplanet.com)

SPONSORED BY: **GREATER STAVANGER**


## Workshop OTC Houston 2012



**Safety Workshop**  
REQUIREMENTS FOR RISK MANAGEMENT  
IN 21<sup>ST</sup> CENTURY OPERATIONS

Oceaneering Space Systems, Houston, 1 May 2012

## Workshop Stavanger 2011



**Planetary Drilling Workshop  
and the Ritland Crater tour**

28-29 August 2011, Stavanger, Norway

## Seminar Stavanger 2011

Invitation to the  
**Space & Energy  
Seminar 2011**  
30-31 August 2011, Stavanger, Norway

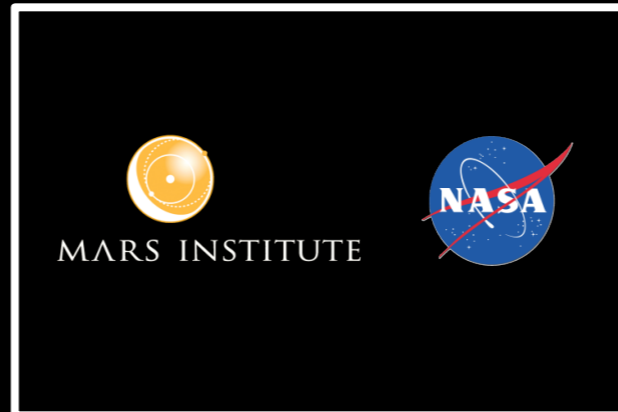


**\*think outside the planet**

## Opening of Mars Institute in Norway ONS Stavanger 2012



## Visit to Mars Institute and NASA Ames 2012



## Pavillion ONS Stavanger 2010

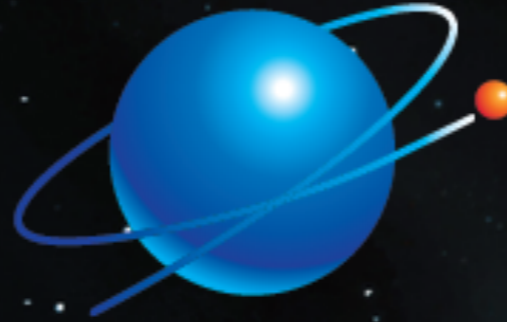




# Risk assessment...



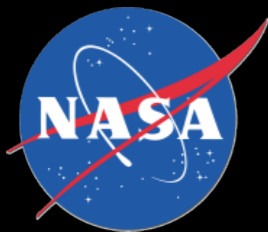




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# REQUIREMENTS FOR RISK MANAGEMENT IN 21<sup>ST</sup> CENTURY OPERATIONS

Space & Energy: Safety Workshop, Tuesday 1 May 2012, Houston



# Crisis management robustness

**Level 5** : CM training for many anytime : culture

**Level 4** : CM training for some sometimes

**Level 3** : CM-plan connected to other systems/sensors

**Level 2** : CM-plan digital in your hand

**Level 1** : CM-plan on paper in your archive

**Level 0** : No crisis management plans (CM-plans)

The tools in a crisis  
must be characterised by

**Simplicity**  
**Robustness**  
**Efficiency**

and be *Available*



# **Crisis management improvisation**

**"We use Facebook to schedule the protests,  
Twitter to coordinate  
and YouTube to tell the world."**

**- Spring 2011, Cairo**





## The IMMER R&D Project

Information Security, Incident Management and Emergency Preparedness in IT-based Operations

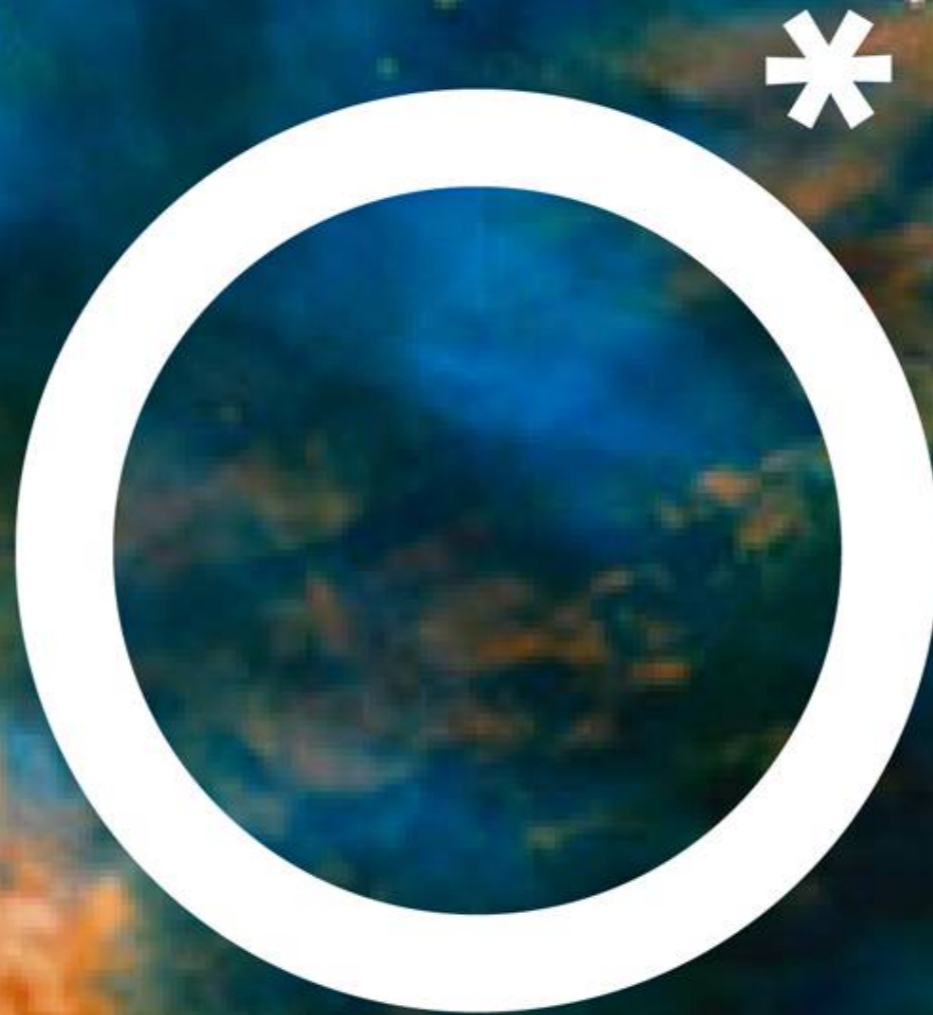
- User driven Research project (BiP) – stretching over 4 years
  - Partners:
    - IntraPoint – project owner – funding / research / software
    - Norwegian research council – funding partner Verdikt program
    - SINTEF ICT & Security - research partner
    - SINTEF Technology & Society - research partner
    - Norwegian University of Technology and Science (NTNU) - research partner, PhD student
    - Tulane University - research partner
    - UC Berkeley – research partner
    - Carnegie Mellon Silicon Valley – research partner
    - Statoil – industrial partner
    - Shell – industrial partner
    - Telenor – industrial partner
    - Amtrak – industrial partner
    - Alitalia – industrial partner



# Work Packages of IMMER

- *WP 1: Cross-sectoral state of the art study*
- *WP 2: Plan for emergency preparedness for communication infrastructure*
- *WP 3: Integrated operations, information security and emergency preparedness*
- *WP 4: Automatic monitoring and alerts of critical information security incidents*
- *WP 5: Performance indicators for 'information security incident management'*
- *WP 6: Dissemination*
- *WP 7: Project management*





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[www.spaceandenergy.no](http://www.spaceandenergy.no)