



**IAP APPLICATIONS FOR THE
ARCTIC
A REAL TIME IMPRESSION OF
THE WORKSHOP**

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INTRODUCTION (1)

- No attempt to summarize such a workshop rich in contents and covering a very wide range of relevant subjects, rather a personal impression about this event, hopefully triggering further discussion
- A very good organization, our thanks to our Danish friends, to DTU and to all those who have contributed to give to this workshop an efficient note and a convivial tone



INTRODUCTION (2)

- Applications oriented event, a good description of Arctic current and future issues, a whole array of challenges to be met. Can space techniques respond adequately to such challenges? It is not as a priority issue developing new technologies, it is more the question of matching an existing space offer with well identified user requirements; this means increasing “symmetry of knowledge”



A NEW ARCTIC (1)

- The Arctic was for centuries a source of scientific curiosity, with very limited commercial exploitation (cod fishing). It stimulated the phantasy of geographers and explorers as the map drawn by Gerardus Mercator (*Septentrionalium terrarum descriptio*) shows: the 4 Euripe streams flowing towards the center of the Earth, the high mountain at the geographical North Pole, one island populated by Pygmies of the same size as the Greenland Skrelingers



A NEW ARCTIC (2)

- The Cold War has transformed it into a major strategic area which prompted military presence and increased defense oriented research. At the end of the Cold War, it went back to the status of scientists' realm until the day when it appeared that major resources (minerals, oil and gas) were present



A NEW ARCTIC (3)

- The quasi simultaneous evidence that the region would be significantly affected by climate change, in some cases facilitating human activities, led to an acceleration of the political and economic interest of the Arctic



SOME HIGHLIGHTS (1)

We have been reminded that there are specific considerations to be taken into account when dealing with the Arctic

- Extreme, adverse but also sensitive environment, remoteness
- Interaction between policy and technology (sovereignty issues vs. continental shelf research)
- Don't forget the human dimension (local populations, industry workers, tourists)
“people expect help...”



SOME HIGHLIGHTS (2)

Features emerging from presentations:

- Growing regulatory framework
- Impact of legal framework on space activities and use of space techniques for implementing/improving legal framework
- Importance of human life: Search & Rescue (safety culture), e-Health/telemedicine
- Impact of new technologies: new ships, AUVs



SOME HIGHLIGHTS (3)

Features emerging from presentations (cont.):

- Risk governance: required by development of critical infrastructures. Need relying on the people in the field for defining the hierarchy of risks; importance of reputational risk. Emergence of new risks such as space weather. Question mark about threat of drifting icebergs



SOME HIGHLIGHTS (4)

- A subject which would deserve discussion in a future event is protection of biodiversity (beyond fishing aspects) and potential introduction of bio-prospecting (an issue already for Antarctica)
- Confirmation of importance of international cooperation, many examples of efficient implementation



SOME HIGHLIGHTS (5)

- Look at more Public/Private Partnerships
- Exploit the educational aspects of an attractive subject for stimulating interest of young engineers and scientists
- Demonstration of the benefits of using integrated applications from space, in conjunction with other means, achieving a holistic approach



WHAT'S NEXT?

- Answer to questionnaire
- Get the set of presentations on ESA IAP Portal
- Maintain networking between participants, organize further meetings, if usefulness demonstrated
- Watch ESA calls for ideas (IAP Arctic Awareness activities) and submit - when maturity is considered sufficient - proposals for demonstration projects



CONCLUSION

*I wish a long life to the
SASDA (Space Applications
for the Sustainable
Development of the Arctic)
community!*



THANK YOU FOR YOUR ATTENTION

