



Baltic Sea Hydrographic Commission

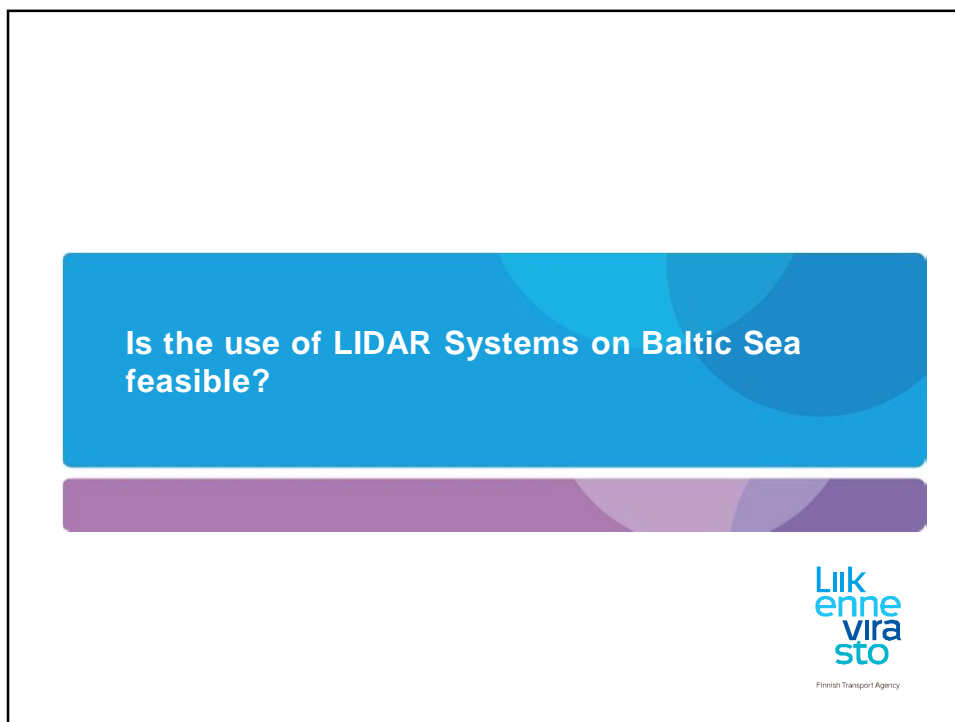
Proposed LIDAR Seminar

16-18 September 2013
Tallinn, Estonia

Juha Korhonen

17 September 2013

Liikennevirasto
Finnish Transport Agency



Is the use of LIDAR Systems on Baltic Sea feasible?

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Finnish Transport Agency

There are performed some projects and test on Baltic Sea

There have been performed or planned several Lidar test projects on Baltic Sea, by Finland 1999, Germany 2012-2013 [Ref BSHC18_C7_DE], Denmark 2011-2012 [Ref. NHC57], Sweden, ...

Also used in some near-by countries, e.g. Norway and France.

However, the results are not widely available.

Unclear if feasible on Baltic Sea environment

The industry has shown interests to present their latest technology.

The program of the BSHC 18th Conference is very tight and there is not enough time to include this kind of seminar. Also the participants may be others than the BSHC18 participants.

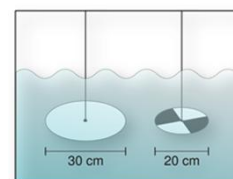
Feasibility of Lidar technology

Many issues to be considered:

Environmental effects: Winds, Temperature, Humidity, Precipitation

Water Clarity:

- Limits depth of penetration
- Limits depth of object detection
- Can vary spatially and temporally
- Clarity affected some extent by wind



Coverage

Feature detection

Costs

etc.....

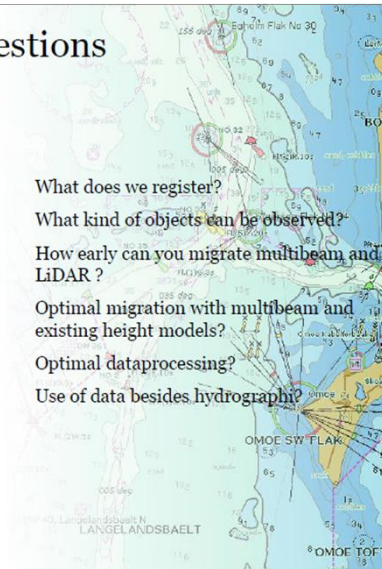
Danish Lidar tests 2011-12 – Conclusions (NHC57)

Results: A long list of questions



- How is the light spreading in water?
- When did light reflects from bottom?
- What happens inside the black system boxes?
- What kind of algorithm is used?
- When can one expect no signal?
- How big is the footprint?
- Can you ignore holes in data?
- Salinity?
- Speed of light though watercolumn?
- How to verify data?
- How to combine LiDAR and Multibeam?

- What does we register?
- What kind of objects can be observed?
- How early can you migrate multibeam and LiDAR ?
- Optimal migration with multibeam and existing height models?
- Optimal dataprocessing?
- Use of data besides hydrographi?



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www.lta.fi Finnish Transport Agency

Proposal to Arrange a Seminar on Feasibility and Experiences of the Use of LIDAR Systems on Baltic Sea



Finnish Transport Agency

Proposal to Arrange a Seminar on Feasibility and Experiences of the Use of LIDAR Systems on Baltic Sea

BSHC18 is asked evaluate the **need** and **possibilities** to arrange a seminar on Feasibility and Experiences of the use of LIDAR systems on Baltic Sea.

The goal should be to **share experiences** and good practices of the state of art LIDAR technology and **evaluate their feasibility** to Baltic Sea, especially on shallow areas.

Participants from BSHC (and NHC, NSHC) members may be invited. Also industry should be invited.

The seminar may have a **closed session** where only representatives of HOs are allowed to participate.

The BSHC 18th Conference may invite **volunteers** to arrange the seminar and discuss on **possible dates** for it, perhaps in 2014.

The seminar could be arranged also back-to-back the NHC 58th meeting in Helsinki on 16-18 August 2014.



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XVIIIth IHC Decision No 17 (PRO 6)

The Conference,

Noting :

- (a) the importance of accurate hydrographic data and information for safety at sea, protection of the marine environment and various other maritime activities;
- (b) the obligation placed on States under SOLAS V/9 for the collection of hydrographic data;
- (c) the fact that the quantity and coverage of good hydrographic data requires improvement in many parts of the world;
- (d) the **need to improve the rate of acquisition of new, more detailed and accurate data and information**;
- (e) the support that various developing States require to be able to carry out the important task of hydrographic surveying; and
- (f) the understanding that hydrographic surveying should be a major focus and responsibility of the IHO and all coastal States;
- (g) The XVIIIth International Hydrographic Conference tasks the IRCC and HSSC in cooperation with the Directing Committee to **progress whatever actions are required to improve the collection, quality and availability of hydrographic data worldwide**, monitor and rectify possible deficiencies and shortcomings, cooperate with other international organizations and stakeholders as necessary, and to keep Member States informed on progress on this issue. **Member States are strongly encouraged to address these deficiencies related to maritime safety worldwide**, both within the IMO framework and through national channels.



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Actions requested from the BSHC18 Conference

BSHC18 Conference is requested to

- evaluate if it is feasible to arrange the proposed seminar
- invite BSHC members to inform their intention to participate and to share their experiences
- agree who are willing to arrange the seminar and on possible dates
- give further guidance, as seen appropriate

Thank you!

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