

SHERPA Project

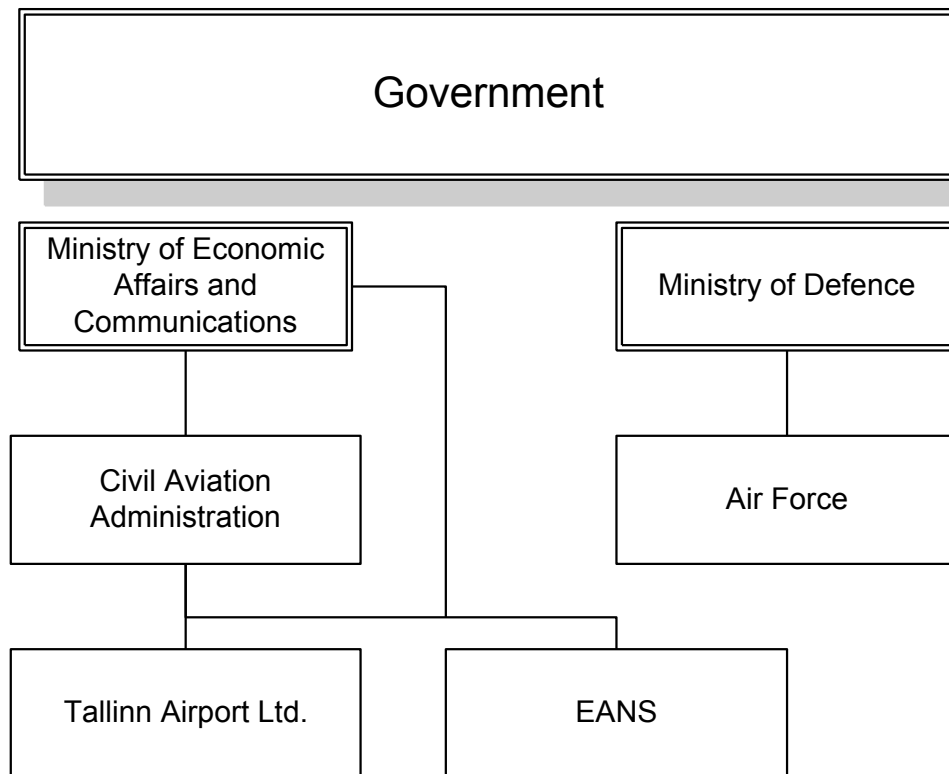
*“Support ad-Hoc to Eastern Region
with Pre-operational Actions on GNSS”*

Final User Forum

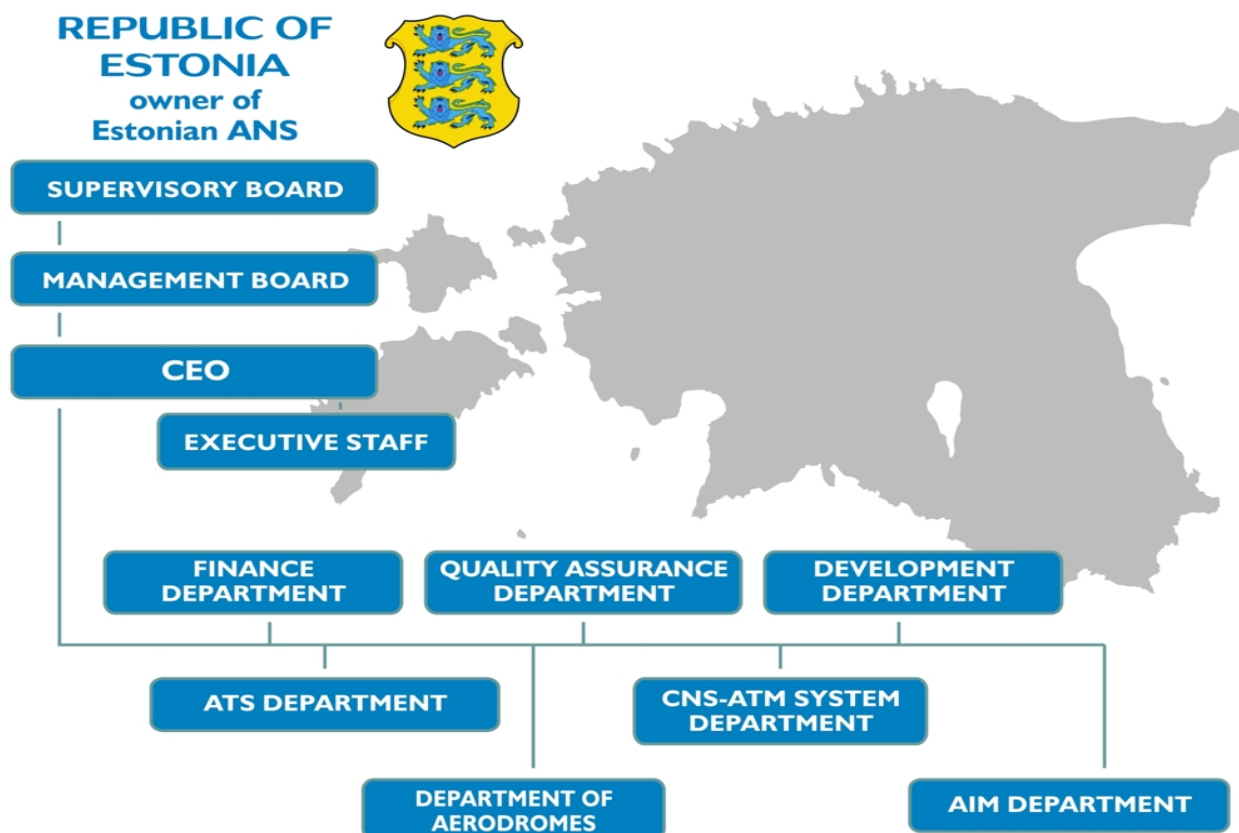
8. SHERPA success stories: Estonia

Dubrovnik, 16th October 2013

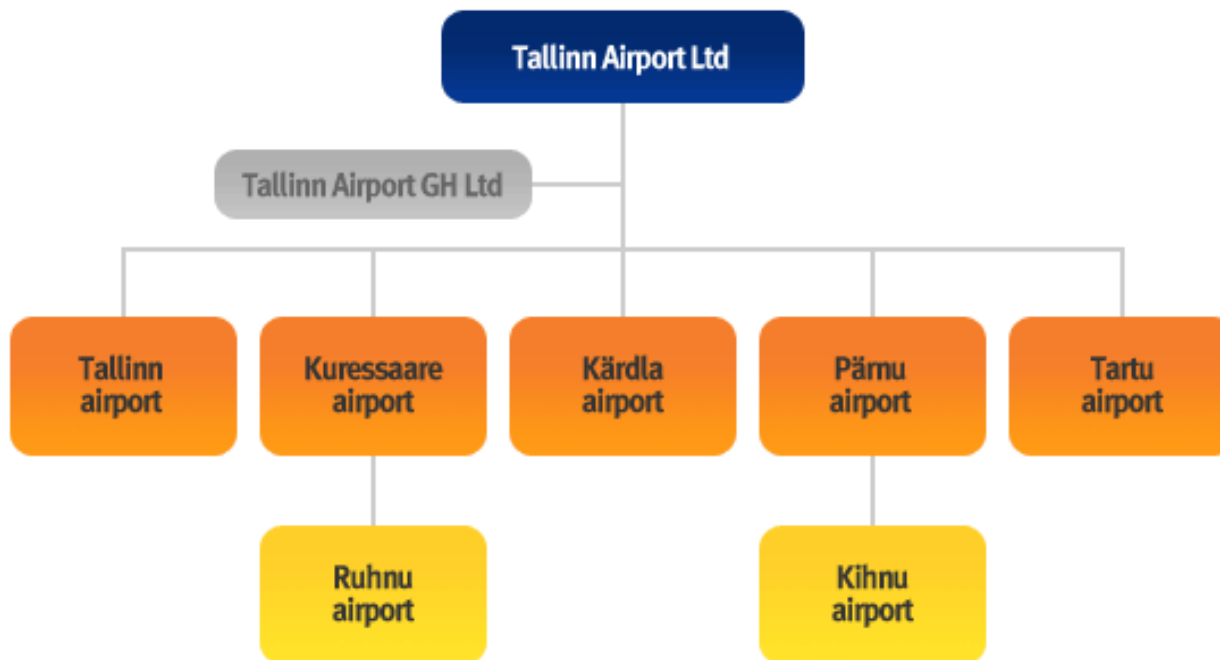
Estonian Institutional framework



Estonian ANS structure



Tallinn Airport Ltd. structure



Roles of EANS and Tallinn Airport

❑ Estonian ANS:

- ATS/CNS service provider in Tallinn FIR;
- ATS/CNS service provider at Tallinn and Tartu aerodromes;
- AIS service provider in Estonia.

❑ Tallinn Airport Ltd:

- Operates all instrument aerodromes in Estonia;
- ATS/CNS service provider at Kärdla (EEKA), Pärnu (EPU) and Kuressaare (EEKE) aerodrome, where LPV implementation is planned in 2014;
- ILS/NDB owner at Tallinn aerodrome.

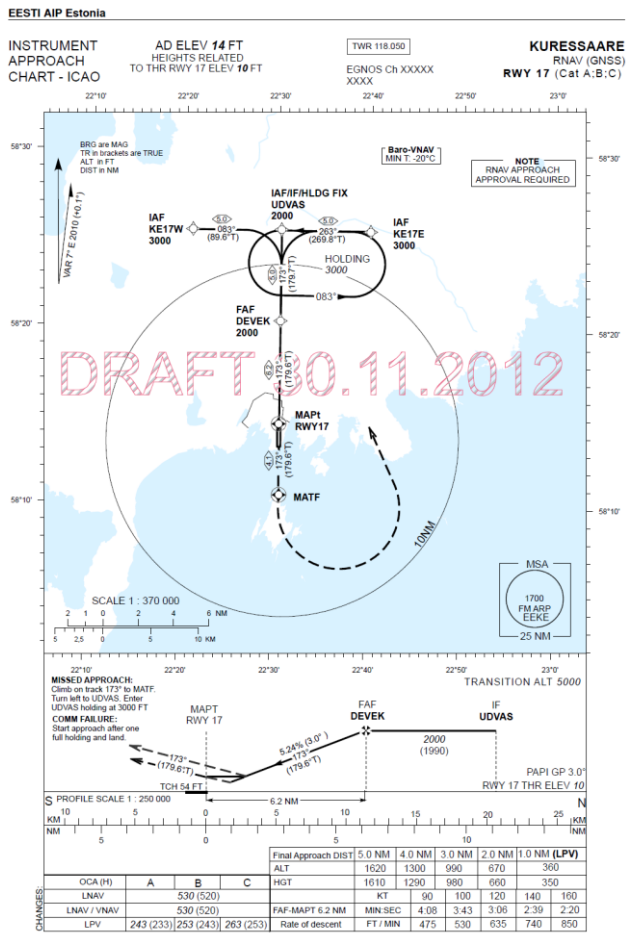
Why did EANS join SHERPA?

- EGNOS adoption and implementation is part of EANS strategy for the future;
- Insufficient local expertise in GNSS and in the implementation of EGNOS based operations;
- “Learning by doing” process with ESSP/Pildo Labs expert support and guidance;
- Possibility of information exchange and sharing through the project workshops with others ANSPs and GNSS relevant stakeholders in Europe (GSA, EASA, Eurocontrol ...);
- Preparation and development of initial steps to actual LPV implementation;

Procedure Design for Kuressaare aerodrome (EEKE)

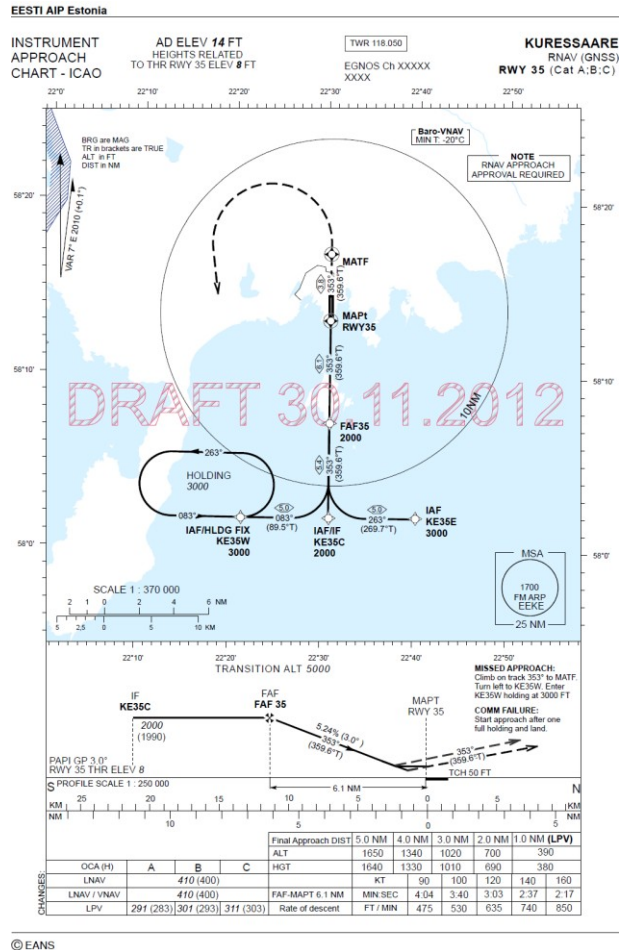
- Procedures for both RWYs (17-35) are developed by EANS designers;
- Final Approach Segment Data Block is calculated;
- Procedures are developed for LPV, LNAV and VNAV minima;
- Procedures are developed in close cooperation and with assistance of Pildo Labs;
- Procedures development was coordinated with National stakeholders;
- Ground and Flight validation are outside of the project scope and will be done during the implementation phase.

Kuressaare RNP APCH RWY 17



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Kuressaare RNP APCH RWY 35



Kuressare LPV Operational Safety Case

- “Initial” operational Safety Case was prepared by EANS safety specialists.
- Due to resources constraints a quantitative operational safety assessment was performed.
- Tallinn Airport Ltd. is going to implement RNP approaches for LNAV and VNAV minima together with LPV approach. These approaches were not considered during the SHERPA safety assessment and should be a part of the operational Safety Case to be conducted by Tallinn Airport.

Kuressaare LPV Business Case

- Work was done by Estonian ANS with support of Tallinn Airport Ltd, which provided required local data;
- In case of the absence of data, assumptions were used;
- Special excel programme was prepared for Business Case calculation
- The Business Case does not demonstrate significant financial benefits due to implementation costs, related to the first LPV implementation in Estonia;
- It is expected that costs will be less for future LPV implementations, when appropriate experience and knowledge will be gained by local staff -> More positive Business cases are expected for future

Difficulties and lessons learnt (1)

- Estonian National Implementation team is represented by three different organisations:
 - Estonian CAA,
 - Tallinn Airport Ltd and
 - Estonian ANS.

Close cooperation between them is essential for reaching project goal.

- Closer cooperation and information exchange would be desirable between partners when important decisions impacting the project are made during project timeframe.
- Different and sometimes limited knowledge about GNSS and particularly EGNOS inside Estonian team at the beginning of SHERPA

Difficulties and lessons learnt (2)

- All national project partners suffered from resource shortage. Some project team members were overloaded with other important activities.
- Tallinn Airport Ltd, who will be responsible for first LPV implementation in Estonia at Kuressaare airport, was unable to participate in SHERPA workshops due to financial and manpower constraints.
- Information exchange and project work were mainly provided through e-mails. Team meetings were organised only in case when decision making was needed. More formal working arrangement with regular team meetings could be beneficial for better information exchange and mutual understanding.

RNP APCHs in Estonian PBN Implementation Plan

- Estonian PBN Implementation Plan is still under development. It is expected that the Plan will be ready this year. Expected RNP APCH implementation time scale looks as follows:

- **Short term (2013-2015)**

Current status

- RNP approaches procedures for LNAV and BARO VNAV minima are developed for both RWY ends of Tartu airport (EETU). These procedures were tested by FlyBe Finland during summer 2013. Implementation will be done at the end of 2013.

Short term implementation

- RNP approach procedures for LNAV, VNAV and LPV minima, developed for both RWY ends of Kuressaare airport (EEKE) in the frames of SHERPA project, will be implemented during the second half of 2014.
- LPV procedures for both RWY ends of Tartu aerodrome (EETU) will be implemented in 2015.

RNP APCHs in Estonian PBN Implementation Plan (2)

- **Mid term (2016-2019):**

Mid term implementation

- RNP approach procedures for LNAV, BARO VNAV and LPV minima will be implemented at EETN*
- RNP approach procedures for LNAV and BARO VNAV minima will be implemented at EEKA and EEPU

**Note: Implementation of RNP APRH at Tallinn airport will be done in consideration of the expected runway extension to prevent unneeded expenses*

LPV implementation at Kuressaare aerodrome

- Tallinn Airport Ltd as Kuressaare airport operator and ANSP will be responsible for LPV implementation;
- LPV Implementation is expected at the end of 2014
- RNP approaches for LNAV and VNAV minima will be implemented together with LPV approach;
- Currently, a specific Implementation Plan is under development;
- Main implementation problems:
 - Insufficient human and financial resources
 - Absence of national flight validation/inspection aircraft
 - Needs to order ATS staff training from external party
- Potential GSA financial support/funding for first LPV implementation in Estonia (at Kuressaare aerodrome) could be available.

Questions?