«HERMITAGE» - FIRST E-NAVIGATION TEST-BED IN RUSSIA

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First Stage of Creating Test-bed "Hermitage"

- In 2016 we started creating the first test-bed e-Navigation in Russia.
- This work performed by the Kronstadt Group in cooperation with our partners (Transas, Abris and others).
- Customer - Ministry of Transport of Russia.
- Research and development (R&D) name – «e-Sea».
- Budget – 5-6 million euros.
- The name of test-bed - "Hermitage" (in honor of the famous museum in St. Petersburg).
- Test-bed includes the sea and the river segments.
- River segment includes three parts: the river, lake and sluiced (gateway).
Borders of Test-bed "Hermitage" in Russia

"Hermitage" - e-Navigation Test-bed

Ladoga lake (lake area of the river segment)

The Svir river (sluice area of the river segment)

The Neva river (estuarine and river area of river segment)

The Eastern part of the Gulf of Finland (sea segment)
Implementing e-Navigation in Russia

Previous experience of our company in the technology e-Navigation:
- R&D "Approach-T" in 2009,
About Kronstadt Group

1990
- Creating Transas company

Creating Transas Group

2015
- Separation of Transas Group

Now
- Kronstadt Group
- Separation of Transas Group
- Transas Group
Infrastructure of Maritime segment
The transition of the vessel between the sea and the river segments
The transition of the vessel from the Neva river to Ladoga lake
Onshore marine and river segments (VTS)

The equipment is installed in Coastal VTS (Petrodvorets) and in river VTS (Shlisselburg)
The ship sea and the river Segments (ECDIS)

ECDIS with e-Navigation functions is elaborated to 7* marine and 5** river vessels

* North-Western Basin Branch FSUE “Rosmorport”
** Basin administration "Volgo-Balt"
Additional Equipment of the Test-bed

**Personal pilot kit** - navigation application for pilot organizations

**Water level meter** - provides information about the water level by GSM communication in VTS

**Synthetic AIS AtoN** - sends information about your location by GSM communication or Iridium SBD in VTS
A fragment of Internet portal for test-bed
In the course of R&D "e-Sea" a lot of research work has been done. More than 2 500 pages of unique materials on e-Navigation, first collected in Russia. We plan to use them in our future work and to popularize this technology in Russia.
System remote transfer ENC and other data

This invention is protected by the patent of the Russian Federation.
The prototype system

- Satellite communication antenna (cheap traffic)
- Powerful Wi-Fi router (on the roof of the water tower)
- The former water tower
- The server with current ENC collection and Internet access
- Wi-Fi adapter and ECDIS on ship board
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Thank you for your attention.

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