DEVELOPMENT OF DIGITALIZATION ON THE INLAND WATERWAYS OF UKRAINE
Inland ECDIS

Information mode

Navigation mode
Naviga
tion mode

Safety

Friendly
Environmental

Efficiency

Predicted Chart
Dynamic during
the voyage

Weather
forecast
Information mode

up to experience

Depend of stakeholders

For instance

Logistic management
Making agreement

Customs & bordering
Should be mandatory

Cargo management
Depend of liability
OBSERVATIONS

Satellite altimetry
Sea surface altimetry model
Gauges information
Sea (river) level measurement
Coriolis force
Coriolis influence
Multivariate analyses

Fx, y, z function
Fx’, y’, z’ function

Sea (river) bottom model
Sea (river) surface model
Chart dynamic model
CDM

Chart dynamic predict

Time scale

Evaluation
Comparison
Mathematic statistic

Depth measurement
(3D, isoline)

Wind (direction, speed, frequency)
Waves (long, height, direction)
Current (speed, direction, depth)
Depth measurement (3D, isoline)

Chart dynamic predict
amendments compare

Chart dynamic model
modifications rectification

Fx, y, z function
Fx’, y’, z’ function

Sea (river) bottom model
Sea (river) surface model

Multivariate analyses
Skipper has possibility to take the 3D vessel moving view in IENS in information mode
Dredging digital
Dredging & calculate volume
Excavator.dll Display

Volume calculate in time (left)
Volume calculate in rest (right)
Excavator.dll
Display continue...
Excavator mooving
Dredge setting

- Position (GPS)
- Orientation (GC, GPS)
- Frame inclination
- Water level and draft
Configuration example
interface
Display viewer current data of dredging process
Self-Removing Dredge

Josef Möbius (Germany)
“bubler” system
Dra DQM SENDER
“cutter dredge” on display
“cutter dredge”
Another application of Audio Watermarking: Subtitle for on-line R/Telephony

THIS IS KRASIN I’M HEADING TO THE OLD BERTH

*Speech recognition is necessary at the transmitting
“It is more and more evident that Traffic Management will shift from safety management to a service that supports the logistic transport chain in a more intensive way, however without compromising the safety”

(RIS Guideline 2018)
logistic
Electronic registration of cargo transportation

- *Conosament* (bill of lading);
  1. Liability - who? - old legislation! New training course!
  2. Information storage – new requirements?
  3. Safety – new rules? Each stakeholder may received full inform, that they wish, but without compromising the safety, so we have to define for each other, separately.

That, what we mention before in this presentation, it is conclusion just from our experiences.

*All the important informations we leave in archive.*
Autonomous sailing will be safer (we hope) than sailing with a crew.

**e-news related to Ukr RIS**

News updated within 24 hours.
Event calendar maintained accordingly.
Old news organized in Archives

**ukrris@com.ua** for submitting the news.
New training course for RIS operator:
1. Navigation mode;
2. Logistic mode;
3. Safety mode
View from Odessa RIS center
THANK YOU FOR YOUR ATTENTION