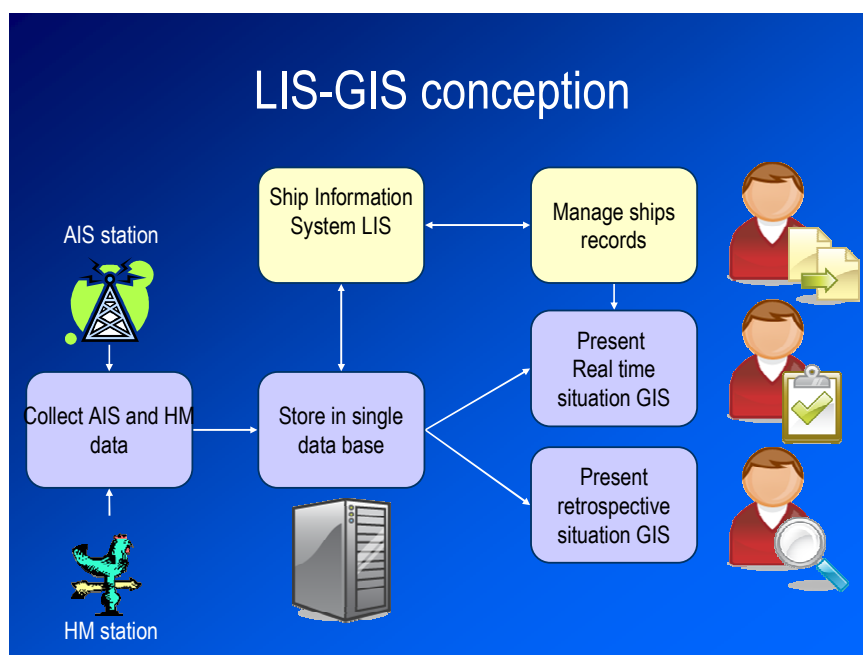


Ship Information System (LIS) extension with Geo-Information Systems (GIS)

PROJECT LIS-GIS



October 2007

East West TC

Algimantas Žygas

Klaipeda State Seaport
Authority/Lithuania

Title: Ship Information System (LIS) extension with Geo-Information Systems (GIS)

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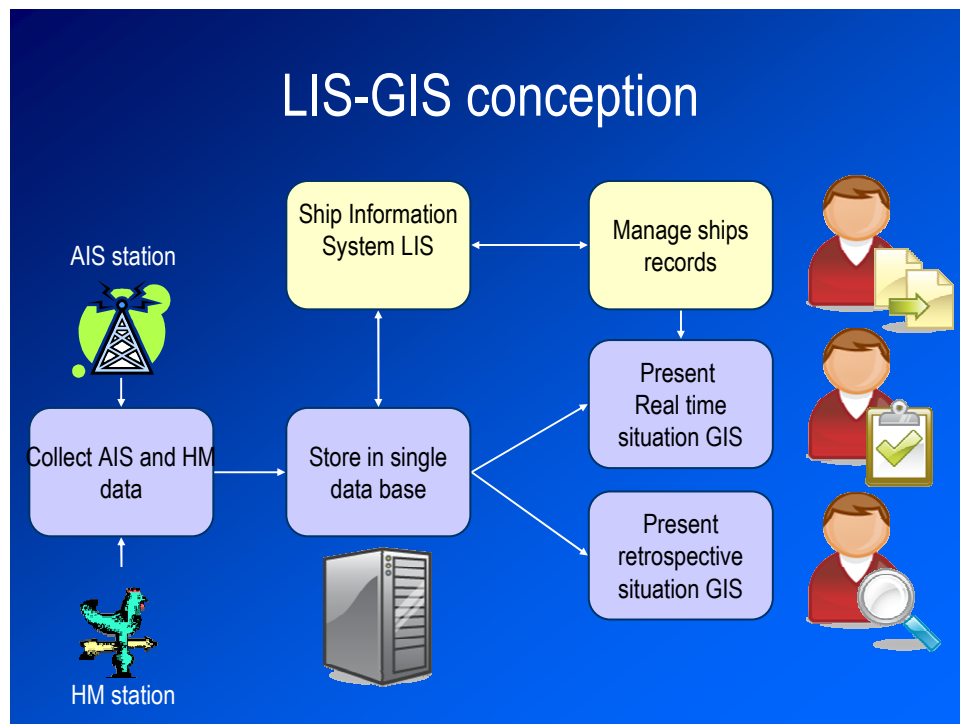
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Main dates of implementation of LIS-GIS project:

- **2006-08-29** beginning of public procurement procedures;
- **2006-08-30** UAB "INFORMACINĖS TECHNOLOGIJOS" was chosen as a contractor for LIS-GIS project by the public procurement department of *Klaipėda State Seaport Authority*;
- **2006-12-27** contract "Ship Information System Extension with Geo-Information Systems Functionality" was signed between UAB "INFORMACINĖS TECHNOLOGIJOS" and *Klaipėda State Seaport Authority*;
- **2007-10-11** project LIS-GIS was completed.

Ship Information System (LIS) extension with *Geo-Information Systems* (GIS) functionality includes: processing, analysis and presentation on map of spatial information services, used to register, observe, analyze and control processes ongoing in seaport channel. LIS-GIS allows to store and use current and historic data on: ships location data, ships movement, weather conditions, water level in channel, maximum depth in seaport channel. All captured data (AIS data, hydro meteorological, topographical) is stored in one Oracle database. Picture showing LIS-GIS conception:



This information system extension will be useful in various departments of *Klaipėda State Seaport Authority*: vessel traffic service, port dispatcher office, seaport channel department, port control and rescue service. Existing *Ship Information System* allows registering of incoming/outgoing ships, calculate taxes, but the System has no geographical data on ships movement and position. While LIS-GIS functionality will visualize this geographical data on a seaport map. Moreover, spatial data will allow easier control of ships in the port; it will also be useful in accident prevention and control. Finally, spatial presentation of data makes user interface visual and easier to use.

Project LIS-GIS was implemented in these steps:

Step	Description
1	Preliminary LIS extension specification
2	Detailed analysis and specification
3	System design
4	System development
5	System testing
7	System installation

Duration of the project implementation: planned project duration was 150 working days, but due to delayed of AIS base station installation, the project duration was extended by 195 working days.

Achieved results of the project

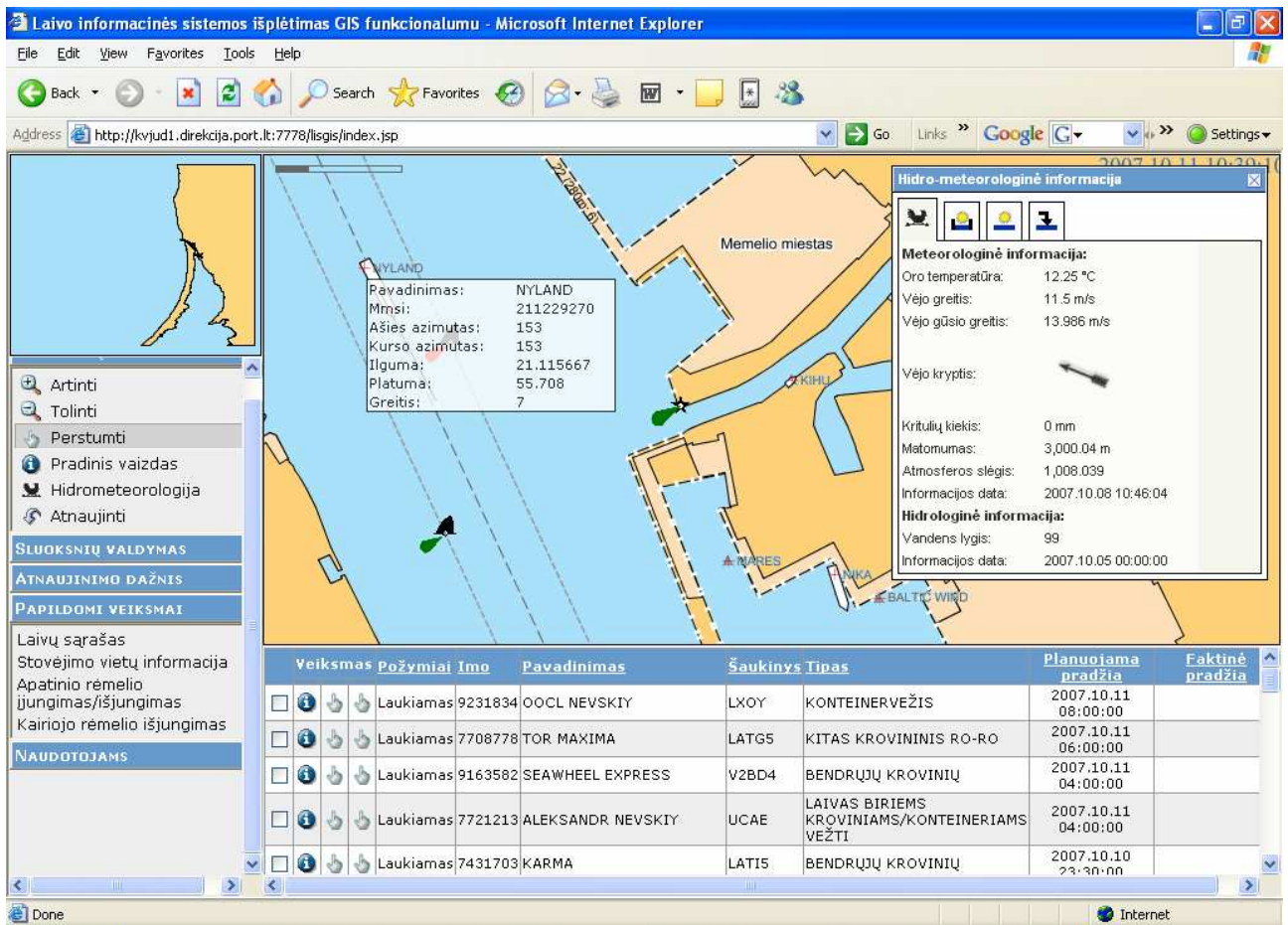
LIS extension module LIS-GIS created:

- Data base for spatial data created;
- Created map control tool;
- Developed ship visualization tools:
 - Ships movement in real time
 - Ship movement directions
 - Ship direction lines
 - Ship mooring and anchorage places
- Ship movement retrospective
- AIS data import (data is stored 30 days)
- Meteorological data import
- Meteorological prognosis import
- Hydrological data import


- Topographical data import
- User authorization and administration module.

All system data is stored in Oracle database, and the system functionality is implemented using Oracle components (Oracle Map Viewer, Oracle Top Link).

Screenshot showing LIS-GIS system:



Hidro-meteorologinė informacija

Meteorologinė informacija:
 Oro temperatūra: 12.25 °C
 Vėjo greitis: 11.5 m/s
 Vėjo gūσιο greitis: 13.986 m/s
 Vėjo kryptis: 
 Kritulių kiekis: 0 mm
 Matomumas: 3,000.04 m
 Atmosferos slėgis: 1,008.039
 Informacijos data: 2007.10.08 10:46:04

Hidrologinė informacija:
 Vandens lygis: 99
 Informacijos data: 2007.10.05 00:00:00

Veiksmas	Požymiai	Imo	Pavadinimas	Šaukinys	Tipas	Planuojama pradžia	Faktinė pradžia
<input type="checkbox"/>			Laukiamas 9231834	OOCL NEVSKIY	LXOY	KONTEINERVEŽIS	2007.10.11 08:00:00
<input type="checkbox"/>			Laukiamas 7708778	TOR MAXIMA	LATG5	KITAS KROVININIS RO-RO	2007.10.11 06:00:00
<input type="checkbox"/>			Laukiamas 9163582	SEAWHEEL EXPRESS	V2BD4	BENDRŪJŲ KROVINIŲ	2007.10.11 04:00:00
<input type="checkbox"/>			Laukiamas 7721213	ALEKSANDR NEVSKIY	UCAE	LAIVAS BIRIEMS KROVINIAMS/KONTEINERIAMS VEŽTI	2007.10.11 04:00:00
<input type="checkbox"/>			Laukiamas 7431703	KARMA	LATIS	BENDRŪJŲ KROVINIŲ	2007.10.10 23:30:00



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