

# CHC-NSC 2018

[www.chc-nsc2018.ca](http://www.chc-nsc2018.ca)

Victoria, B.C.  
March 26-29, 2018

Victoria, C.B.  
26 au 29 mars 2018



Land and Sea Shaping the World  
Terre et Mer Façonnant le Monde

Integrated solution for seafloor mapping, processing and distribution

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Kongsberg Maritime

[#chcnsc2018](https://twitter.com/chcnsc2018)

# Kongsberg Maritime, Subsea Division



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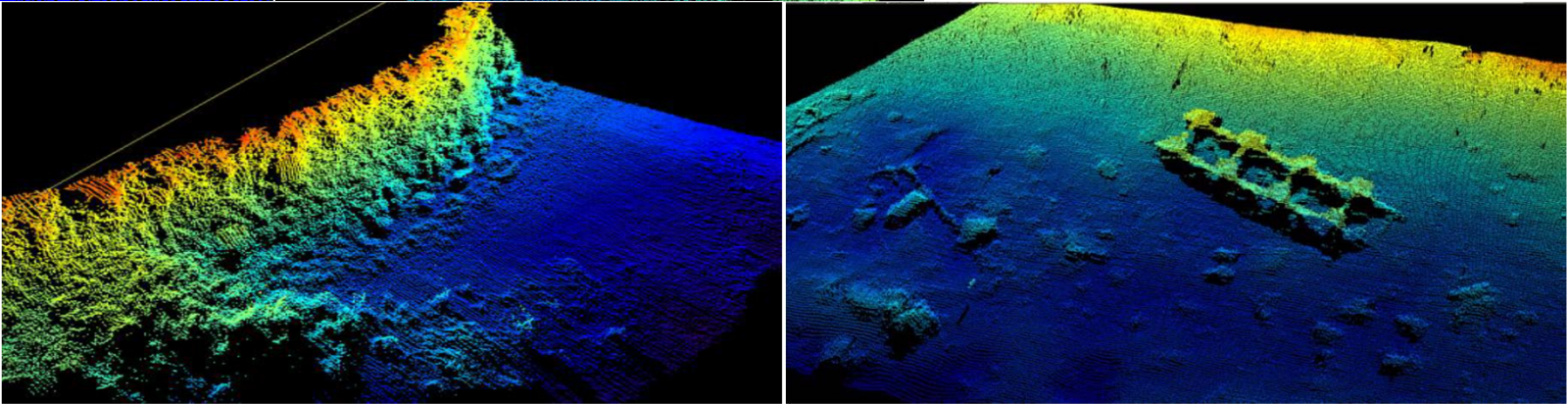
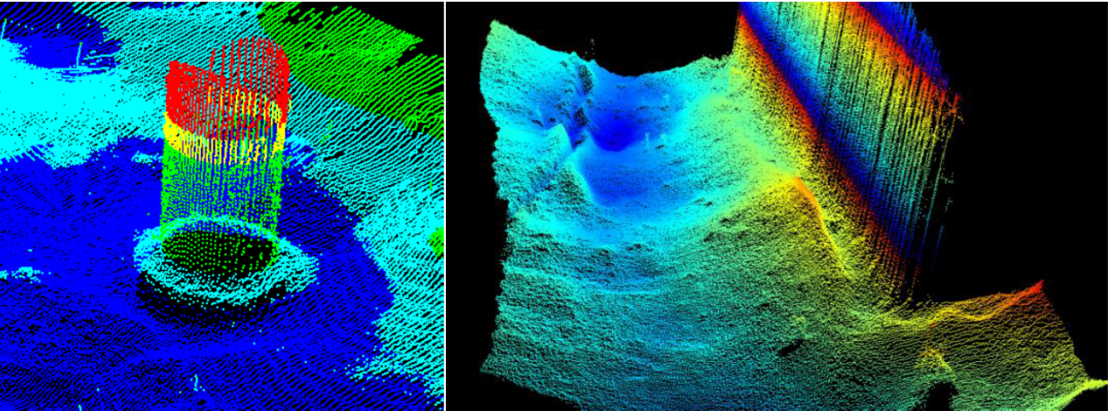
# Multibeam Echosounders, the EM™-family



# Processing Software



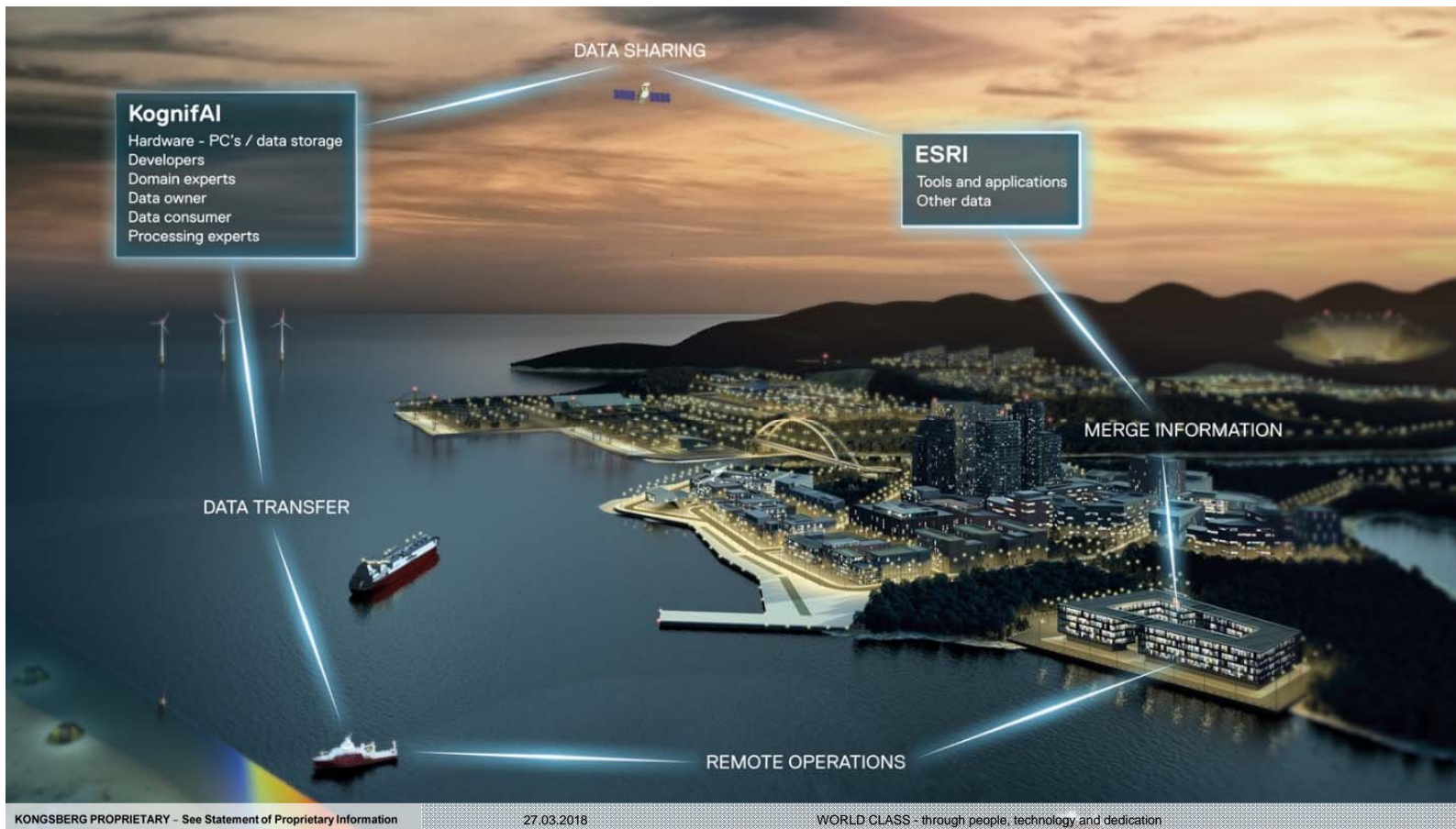
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# Kognifai



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# Kognifai

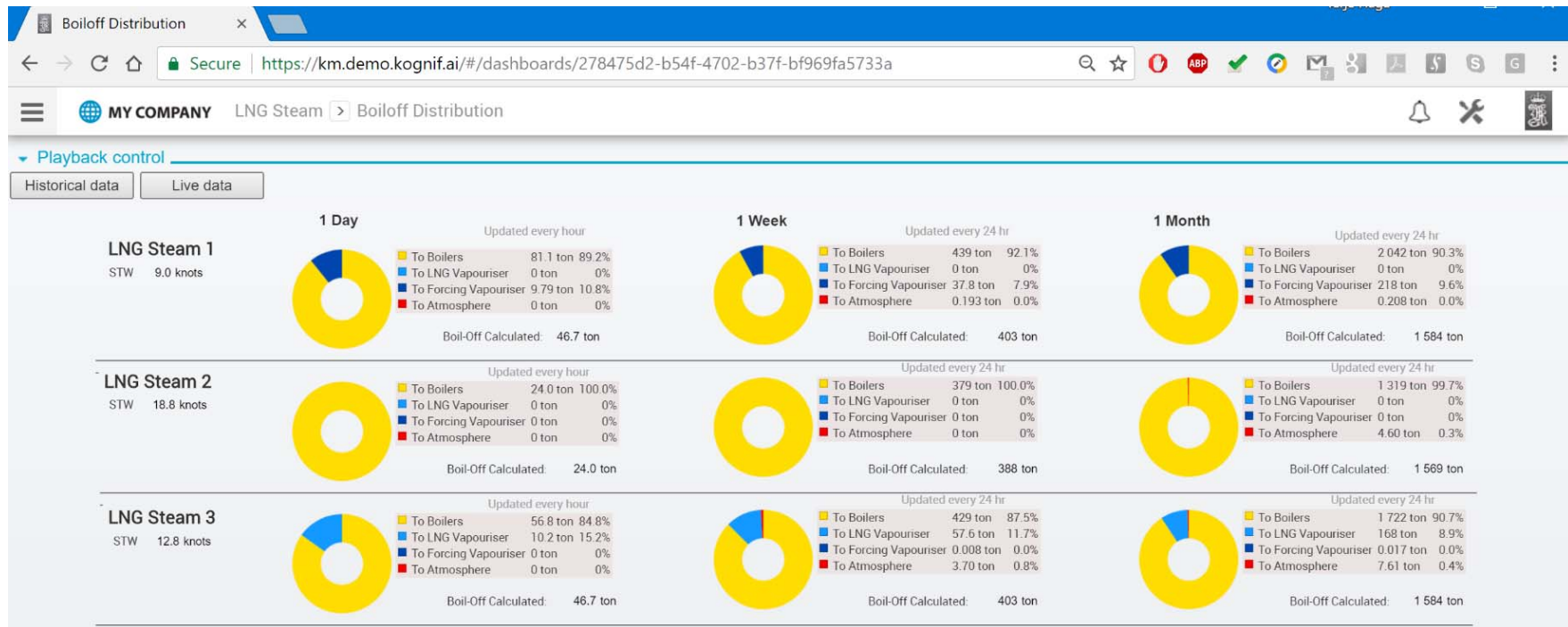


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- Data upload
- Data sharing
- Combining data from many sources
- Big Data makes Machine Learning possible
- Scalable computer resources
- Easy access to Kognifai
- Secure storage
- Hybrid Cloud
- Software Development Kit for developers
- Virtual PC

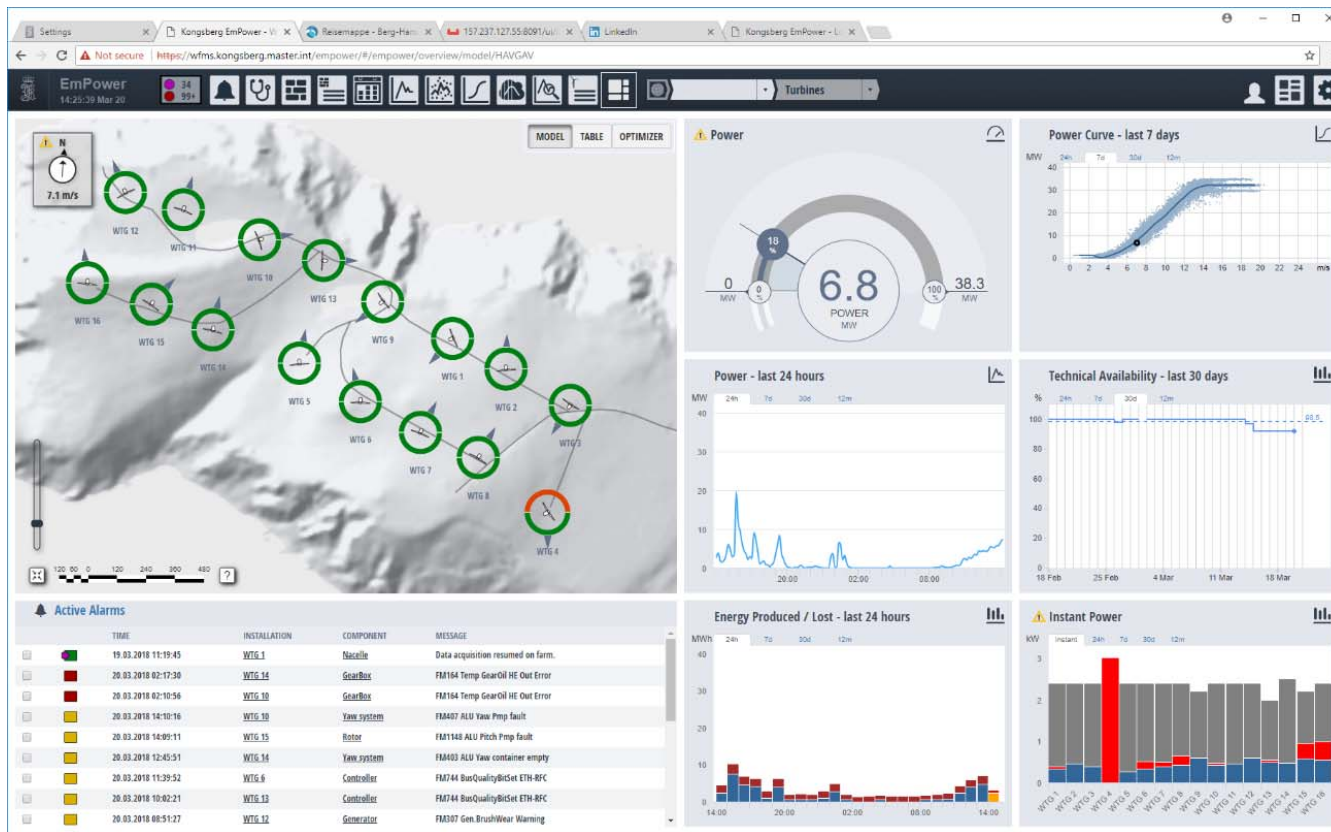
Example

# Kognifai in use – Vessel & Fleet Management



Example

# Kognifai in use – Windfarm Management

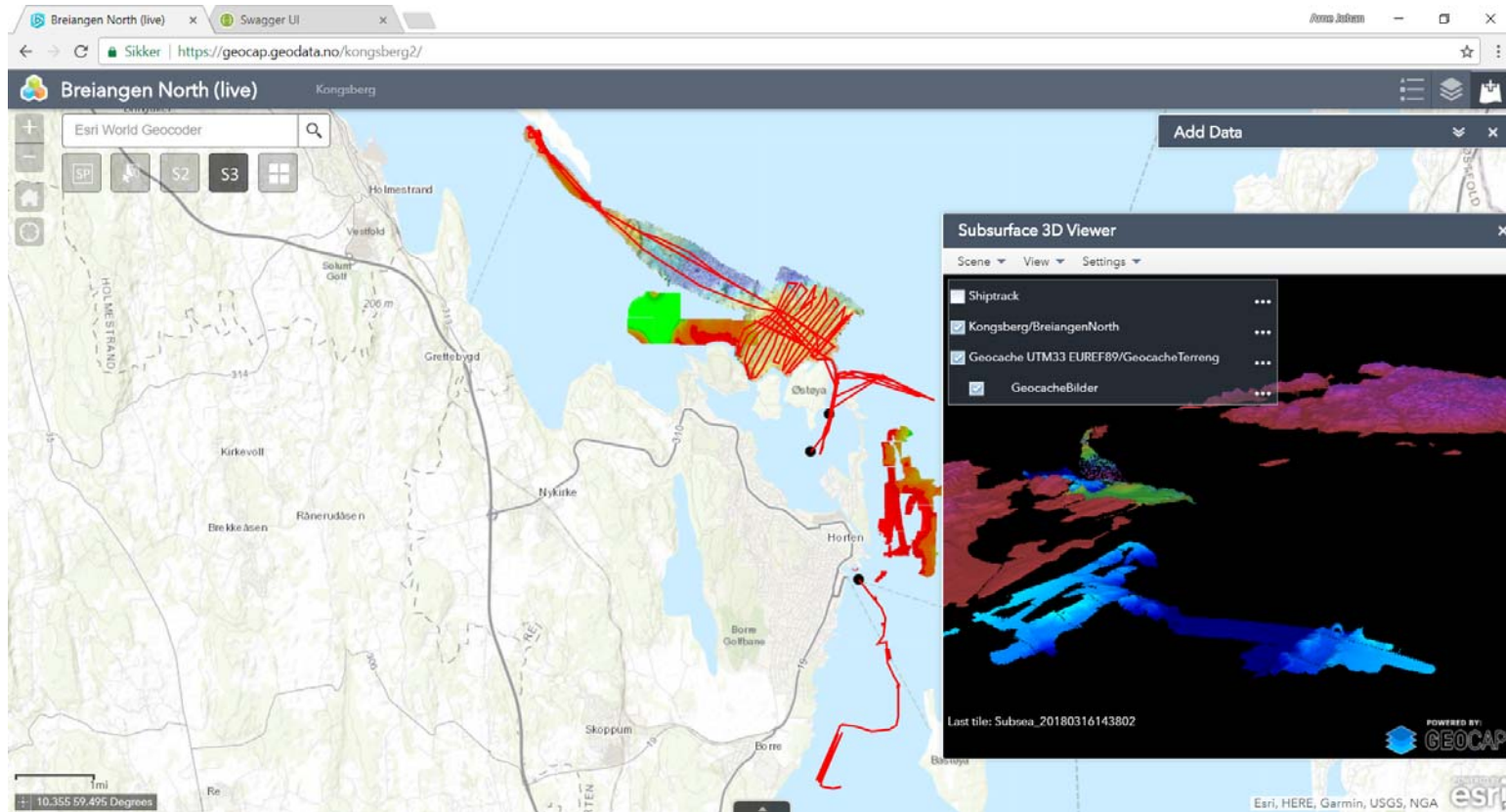




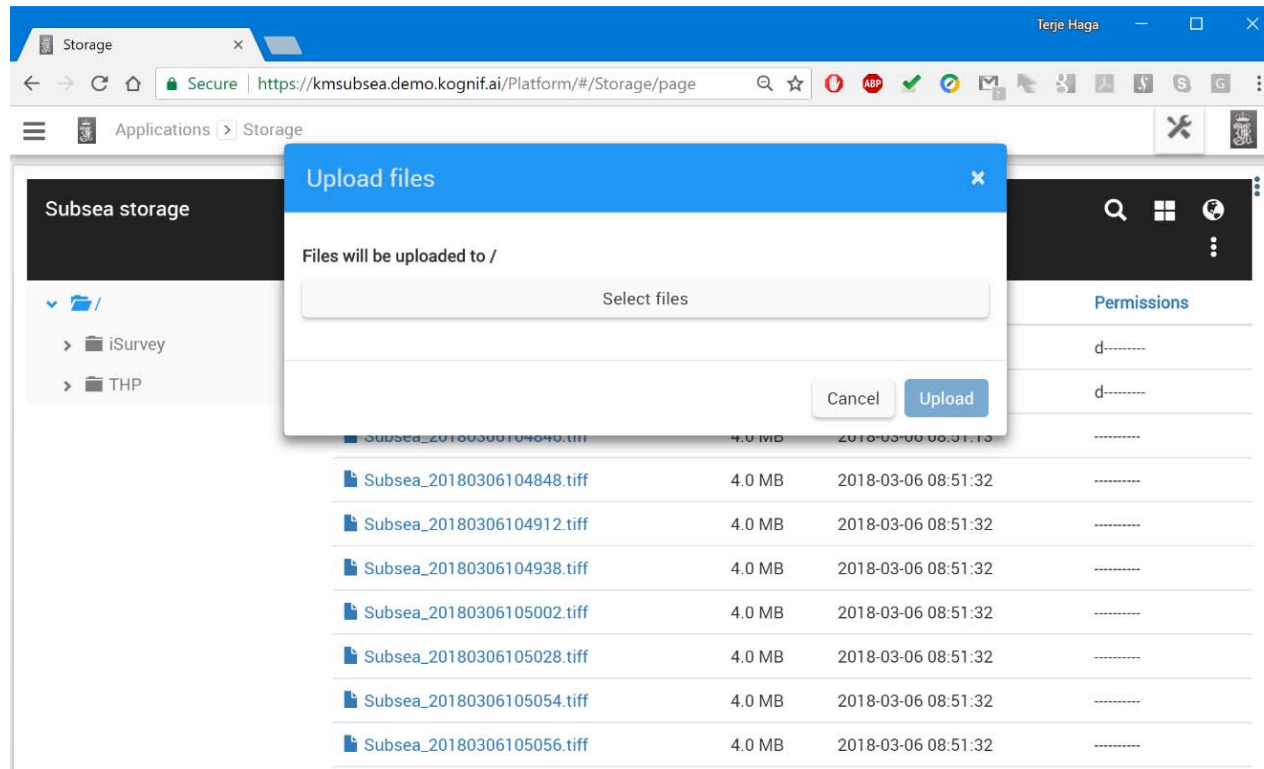
# Mapping Cloud



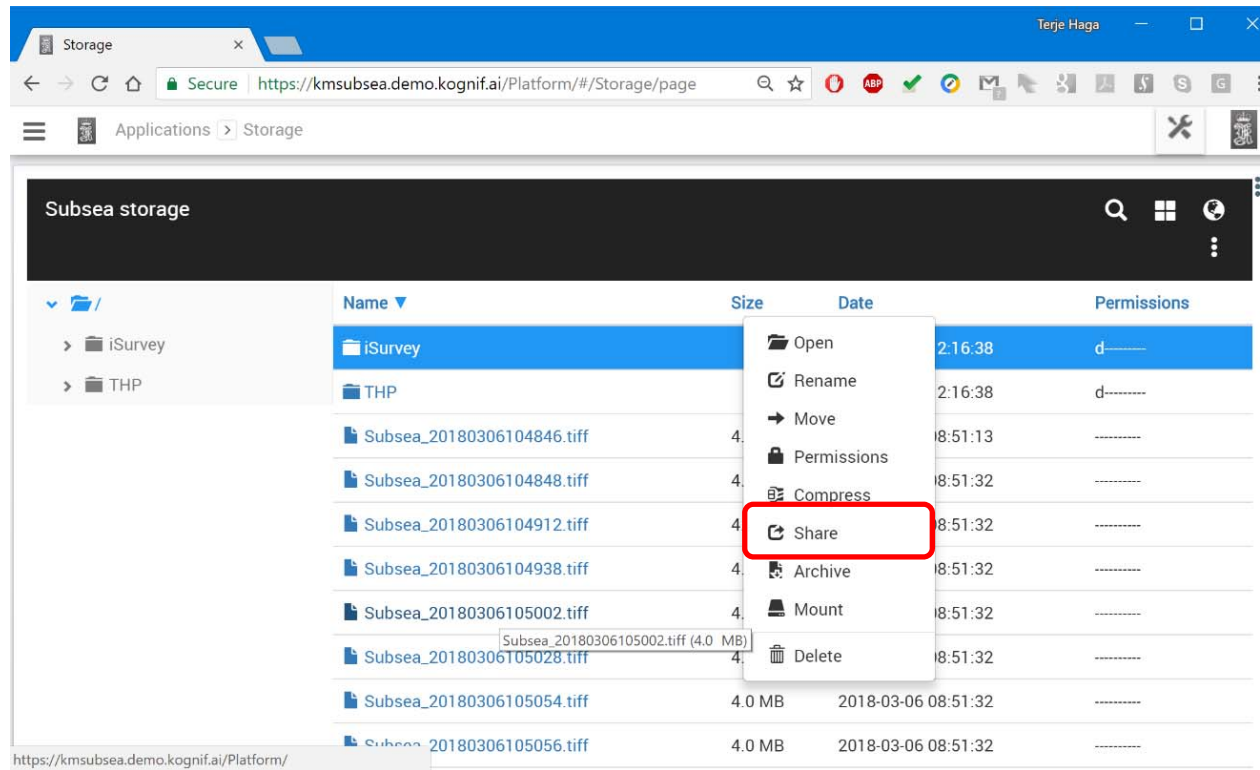
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# Kognifai – File Manager



# Kognifai – File Manager



# Kognifai – File Manager



The screenshot shows a web browser window with the address bar displaying <https://kmsubsea.demo.kognif.ai/Platform/#/Storage/page>. The page title is "Storage" and the user is logged in as "Terje Haga". The main content area is titled "Subsea storage" and displays a file manager interface. On the left, there is a sidebar with a tree view showing folders "iSurvey" and "THP". The main area shows a table of files with columns for Name, Size, Date, and Permissions. A context menu is open over the file "Subsea\_20180306105028.tiff", with the "Archive" option highlighted by a red rectangle.

Name	Size	Date	Permissions
iSurvey		2:16:38	d-----
THP		2:16:38	d-----
Subsea_20180306104846.tiff	4.0 MB	8:51:13	-----
Subsea_20180306104848.tiff	4.0 MB	8:51:32	-----
Subsea_20180306104912.tiff	4.0 MB	8:51:32	-----
Subsea_20180306104938.tiff	4.0 MB	8:51:32	-----
Subsea_20180306105002.tiff	4.0 MB	8:51:32	-----
Subsea_20180306105028.tiff	4.0 MB	8:51:32	-----
Subsea_20180306105054.tiff	4.0 MB	2018-03-06 08:51:32	-----
Subsea_20180306105056.tiff	4.0 MB	2018-03-06 08:51:32	-----

# Kognifai – File Manager



The screenshot shows a web browser window displaying the Kognifai File Manager interface. The browser address bar shows the URL <https://kmsubsea.demo.kognif.ai/Platform/#/Storage/page>. The page title is "Subsea storage". The interface shows a sidebar with a folder tree containing "iSurvey" and "THP". The main area displays a table of files and folders. A context menu is open over the "iSurvey" folder, with the "Mount" option highlighted by a red rectangle.

Name	Size	Date	Permissions
iSurvey		2:16:38	d-----
THP		2:16:38	d-----
Subsea_20180306104846.tiff	4.0 MB	8:51:13	-----
Subsea_20180306104848.tiff	4.0 MB	8:51:32	-----
Subsea_20180306104912.tiff	4.0 MB	8:51:32	-----
Subsea_20180306104938.tiff	4.0 MB	8:51:32	-----
Subsea_20180306105002.tiff	4.0 MB	8:51:32	-----
Subsea_20180306105028.tiff	4.0 MB	8:51:32	-----
Subsea_20180306105054.tiff	4.0 MB	2018-03-06 08:51:32	-----
Subsea_20180306105056.tiff	4.0 MB	2018-03-06 08:51:32	-----

# KognifAi Application Framework



The image displays two browser windows from the KognifAi application framework. The top window shows a home dashboard with a navigation menu on the left containing 'Home', 'admin', 'Settings', 'Applications', 'Mission Planner', 'APOS', 'Remote Helmsman', 'Storage', 'sisgo', 'Tools', and 'About'. The main content area has three large buttons: 'Add Favorite', 'Mission Planner', and 'Storage'. The bottom window shows a detailed 'Main engine port' dashboard. It features a 'Playback control' section with 'Historical data' and 'Live data' tabs. The dashboard includes several data visualization components: a 'Main engine port' status indicator with a red warning triangle, a 'Cylinder temperature' bar chart, a 'Crankshaft main bearing temp' bar chart, and multiple gauge panels for 'Fuel oil', 'Lubric oil', and 'Jacket water'. Each gauge panel displays 'Pressure in', 'Pressure filter in', and 'Temperature' readings, all showing 42.1 DEG. C. There are also control elements for 'Clutch' (engaged ahead/astern), 'Air inlet temp', and 'Reduction gear' (LO press, LO temp, Operat oil press, Cool water temp, Primary cooling water pump, Backup cooling water pump).

# Kognifai – Virtual PC



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The screenshot shows the Microsoft Azure portal interface. The left sidebar contains navigation options like 'Create a resource', 'All services', 'Dashboard', 'All resources', 'Resource groups', 'App Services', 'Function Apps', 'SQL databases', 'Azure Cosmos DB', 'Virtual machines', 'Load balancers', 'Storage accounts', 'Virtual networks', 'Azure Active Directory', 'Monitor', 'Advisor', and 'Security Center'. The main content area displays the 'Virtual machines' page for 'Kongsberg Digital AS'. It shows a table with 3 items:

NAME	TYPE	STATUS	RESOURCE GROUP	LOCATION
KMSASest	Virtual machine	Stopped (deallocated)	N00262_westeurope	West Europe
KMSubseaWeb	Virtual machine	Running	N00262_westeurope	West Europe
PostProcessing	Virtual machine	Stopped (deallocated)	N00262_westeurope	West Europe

The screenshot shows a remote desktop connection to a virtual machine. The desktop background is the Windows 10 logo. An application window titled 'sqlAgent - 4' is open, displaying a SQL Server Agent job named 'sqlAgentJob'. The job is currently running. The 'Data Output' tab shows a table with columns: 'customer\_id', 'message', 'created\_date', 'message\_text', 'message\_text\_html', 'priority', 'file\_type', 'file\_name', 'description', and 'url'. The table contains several rows of data, including customer IDs and message content.

customer_id	message	created_date	message_text	message_text_html	priority	file_type	file_name	description	url
1	Message	2018-03-20 13:24:46.225035			1071	010400002...	2246495...	Subsea_20180320...	Test
2	Message	2018-03-20 13:24:57.77176			1070	010400002...	5969376...	Subsea_20180320...	Test
3	Message	2018-03-20 13:25:04.940075			1068	010400002...	287444...	Subsea_20180320...	Test
4	Message	2018-03-20 13:25:05.614048			1068	010400002...	640037...	Subsea_20180320...	Test
5	Message	2018-03-20 13:25:04.93214			1067	010400002...	586649...	Subsea_20180320...	Test
6	Message	2018-03-20 13:25:05.520847			1064	010400002...	168154...	Subsea_20180320...	Test
7	Message	2018-03-20 13:25:02.932106			1063	010400002...	778683...	Subsea_20180320...	Test

# Sharing data with Kognifai



- IOT Devices
- Connected storage
  - Azure AD
- REST services
  - OpenID security

Swagger UI | <https://kmsubsea.demo.kognif.ai/GISIntegration/swagger/ui/index#/ShipTrack>

swagger |  | Explore

### ESRIIntegration

Show/Hide | List Operations | Expand Operations

**GroundOverlay**

- GET /api/groundoverlay Returns a list of all overlays in KML ground overlays form.
- GET /api/groundoverlay/{mission\_id} Returns the list of all overlays in a specific survey in KML ground overlay form.
- GET /api/overlayresource/{resourceUri} Returns an overlay resource.

PlannedLines Show/Hide | List Operations | Expand Operations

**ShipTrack**

- GET /api/shiptrack Returns the track of all active surveys in KML linestring form.
- GET /api/shiptrack/{mission\_id} Returns the track of a specific survey in KML linestring form.
- GET /api/shiptrack/lastKnownPositions Returns the last known position of all active surveys in KML placemark form.

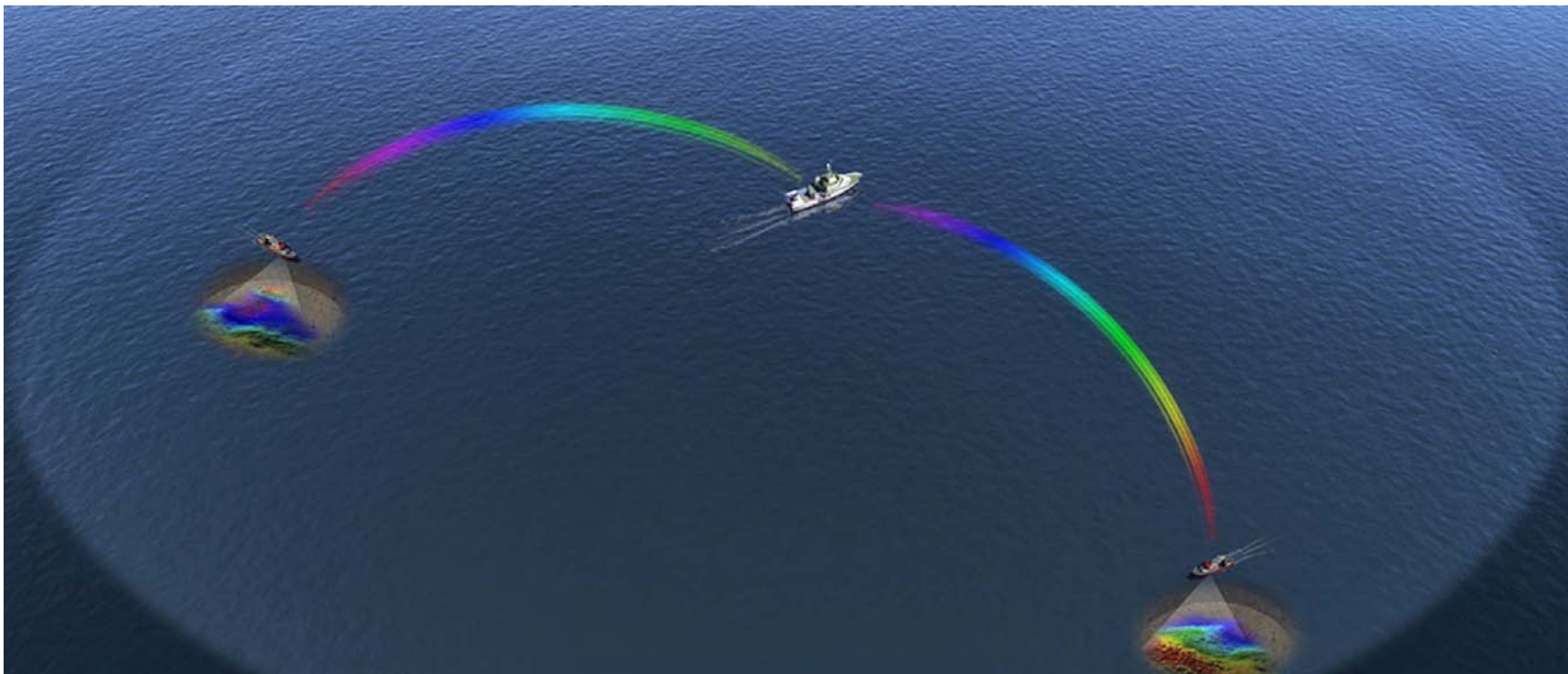
SwathCoverage Show/Hide | List Operations | Expand Operations

TerrainModel Show/Hide | List Operations | Expand Operations

[ BASE URL: /GISIntegration , API VERSION: v1 ]



# Ship-to-Ship Communication during subsea mapping Marine Broadband Radio (MBR)



# Digital Ocean



The screenshot displays a web browser window with the URL <https://eai.maps.arcgis.com/home/webmap/viewer.html?webmap=77737ce527694d9d8fa462436f53caf6&extent=10.3161,59.4237,10.5695,59.5096>. The page title is "SmartOcean Demo - Norway - WebMap-LiveView". The interface includes a top navigation bar with "Home", "SmartOcean Demo - Norway - WebMap-LiveView", "New Map", "Edit Presentation", and "Kongsberg". Below this is a toolbar with icons for "Details", "Add", "Basemap", "Analysis", "Save", "Share", "Print", "Directions", "Measure", and "Bookmarks". A search bar is also present. On the left, a "Contents" panel lists various layers: "SVP Sample Locations", "Points of Interest", "Mission Plan (Route)", "Sub Bottom Survey Lines", "Areas of Interest", "Coastline - Reference", "EMU Cluster Polygon - Esri", "Pulsar Sidescan", "KognifAi Last Known Positions", "KognifAi Shiptracks", "Navigation", "Magnetometer Strip Grid", and "Spot Images - Mission". The main map area shows a dark-themed map of Oslofjorden with blue lines representing ship tracks and a yellow area representing a mission plan. An inset image in the top right shows a close-up of a seabed scan. The bottom of the map features the Esri logo and "POWERED BY esri" text.



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# WORLD CLASS

THROUGH PEOPLE, TECHNOLOGY AND DEDICATION