

CHC-NSC 2018

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

Arne Johan Hestnes
Kongsberg Maritime

#chcnsc2018

Kongsberg Maritime, Subsea Division



KONGSBERG



Multibeam Echosounders, the EM™-family



KONGSBERG

M3: 50m

EM2040P: 550m

EM302: 7000m

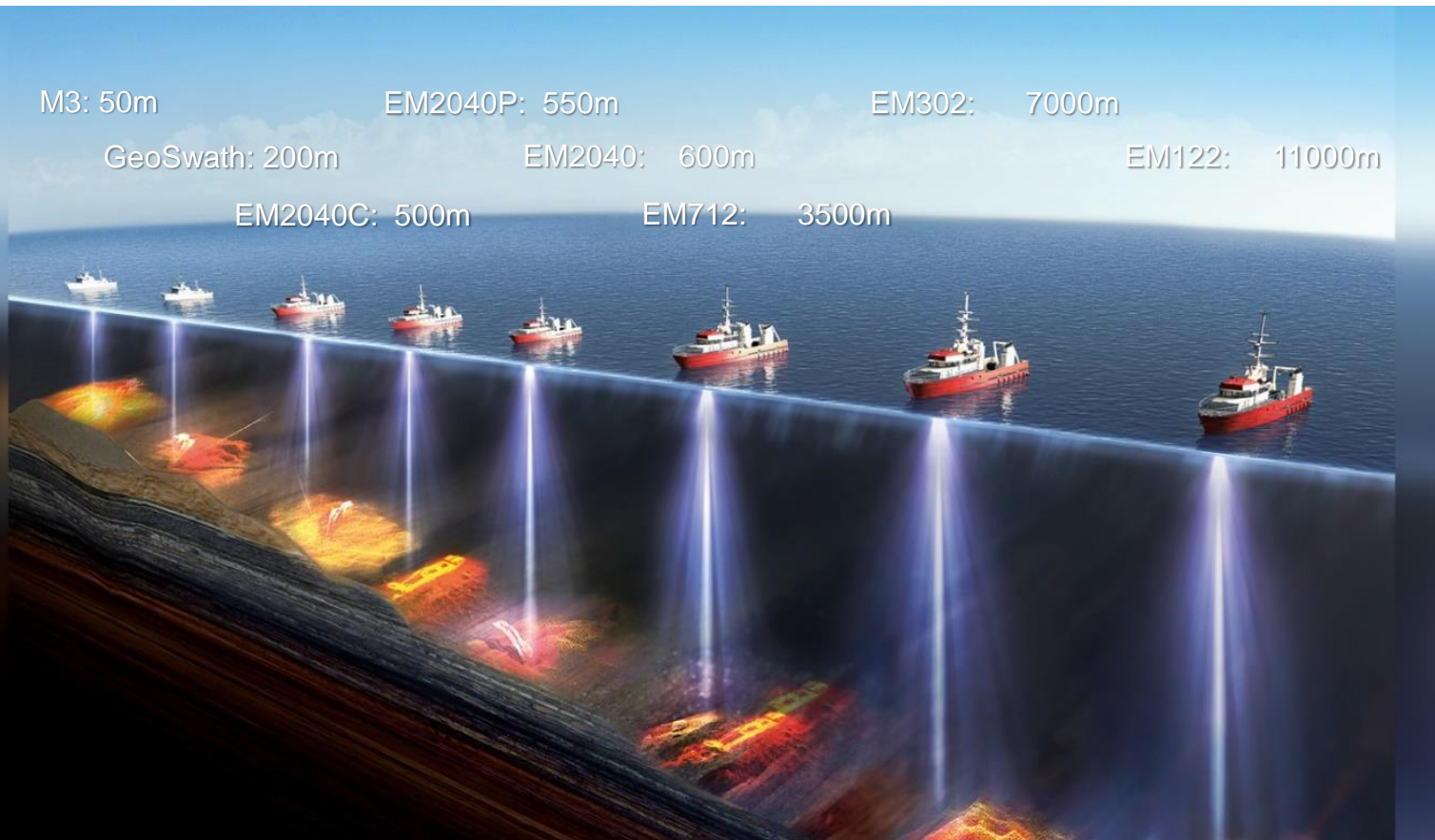
GeoSwath: 200m

EM2040: 600m

EM122: 11000m

EM2040C: 500m

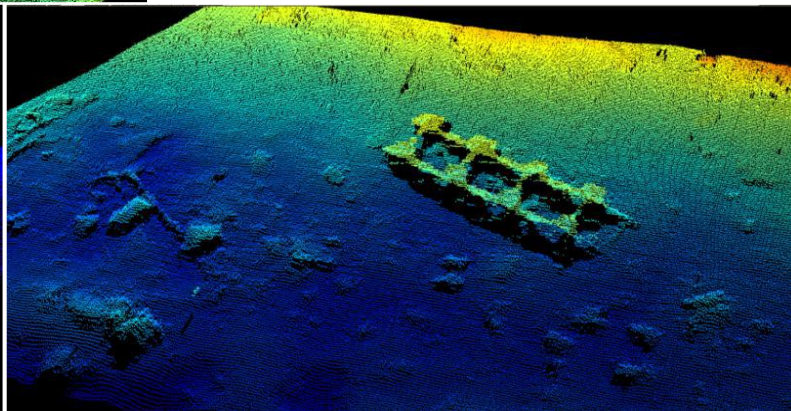
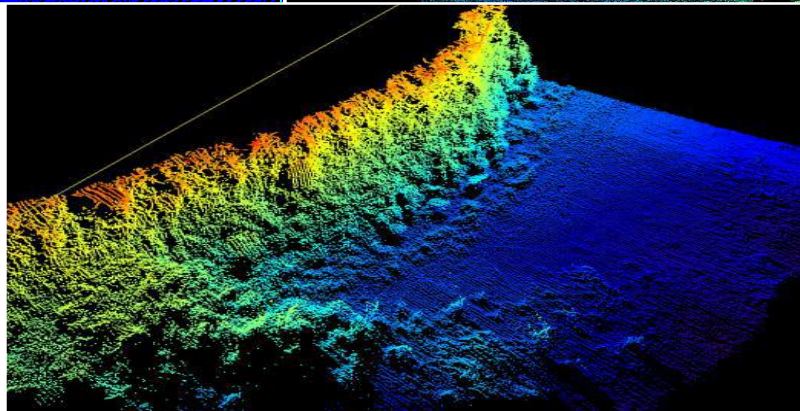
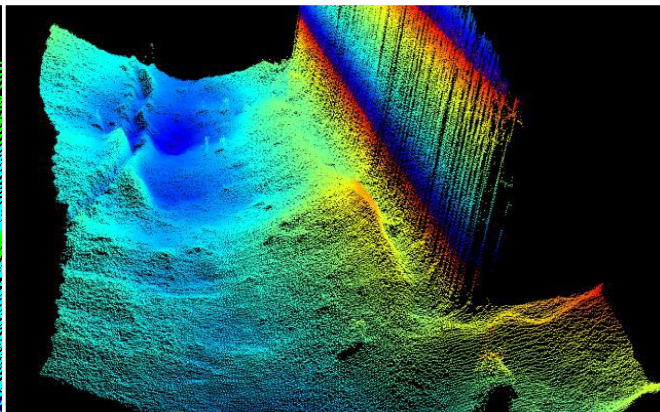
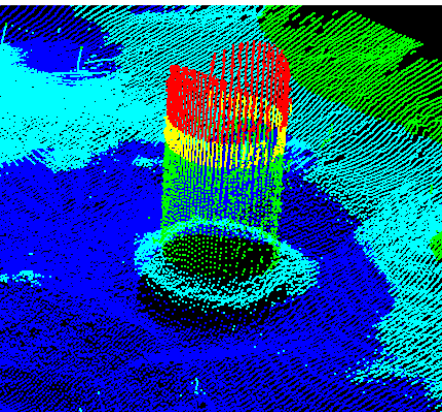
EM712: 3500m



Processing Software



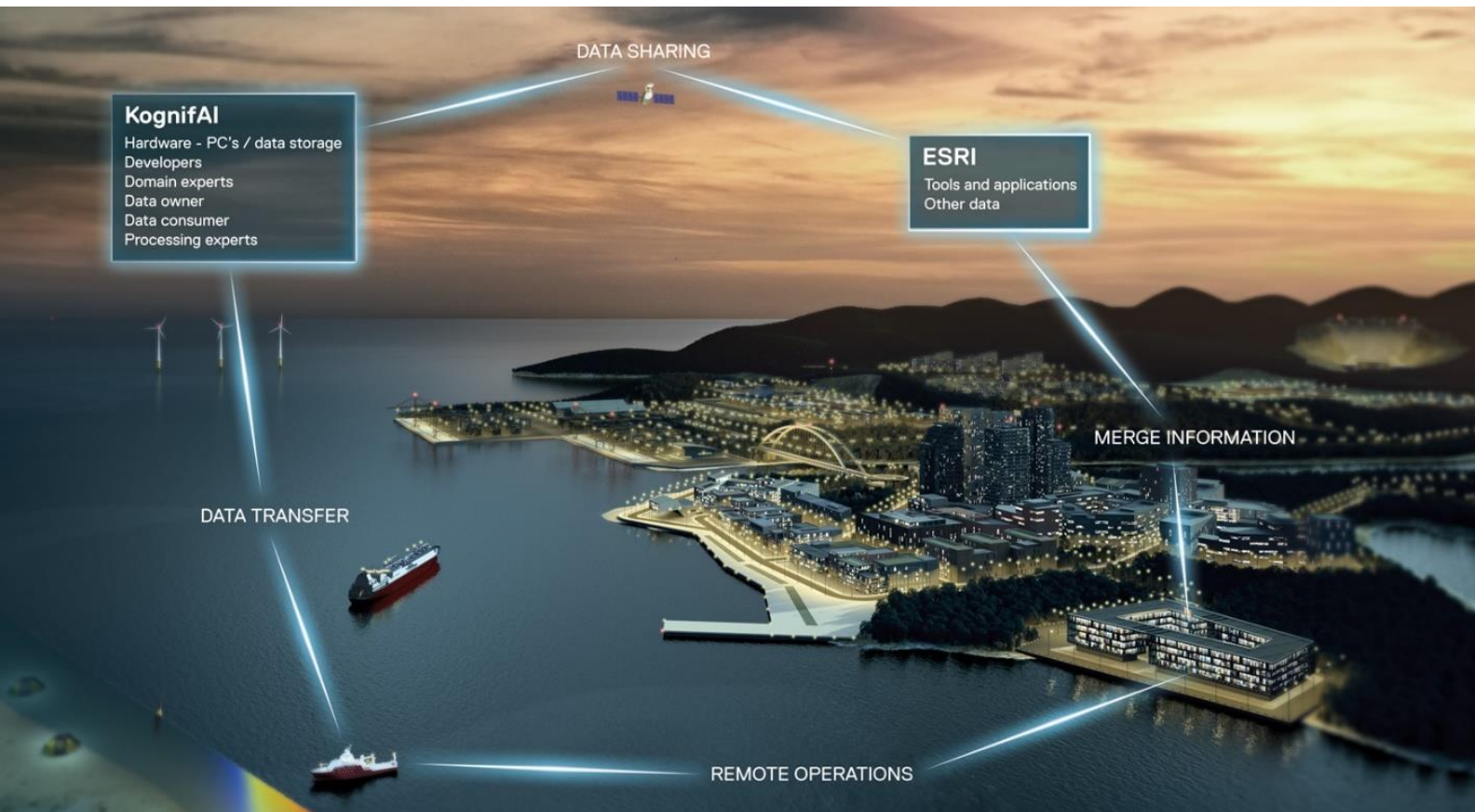
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Kognifai



KONGSBERG



Kognifai

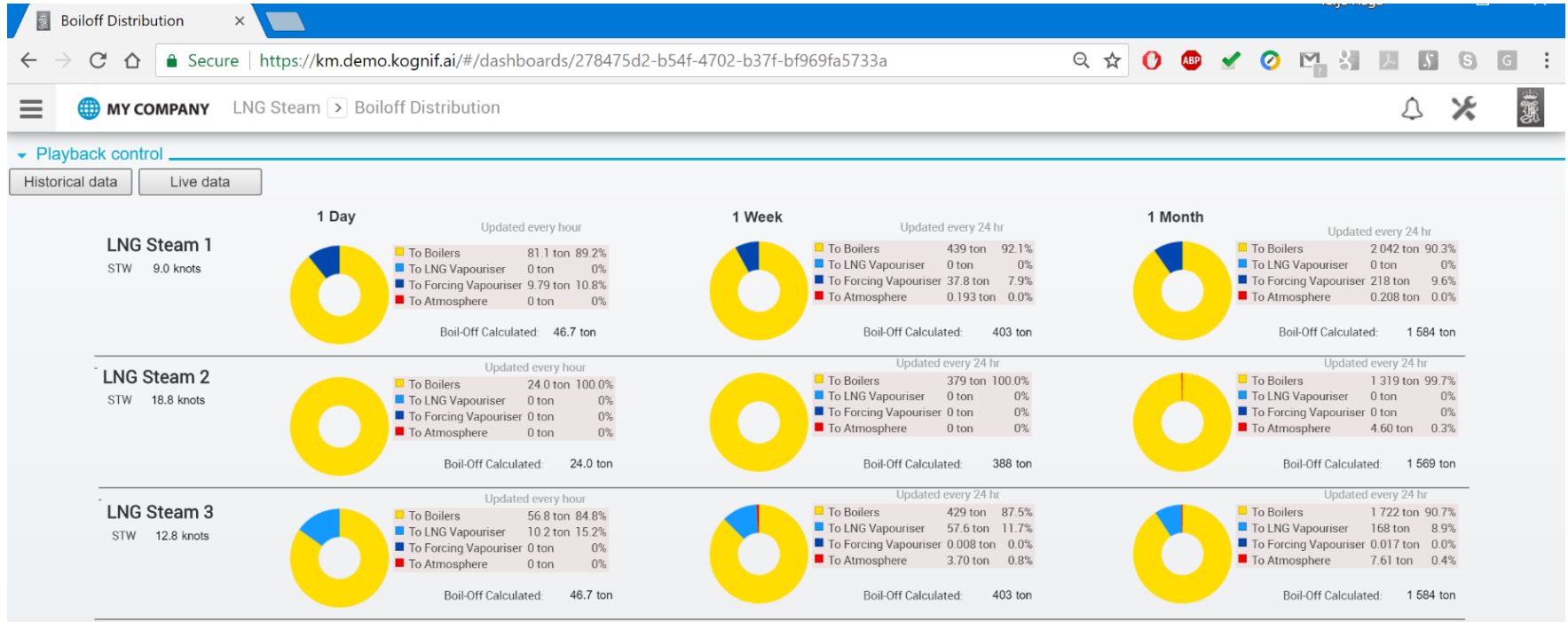


KONGSBERG

- 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



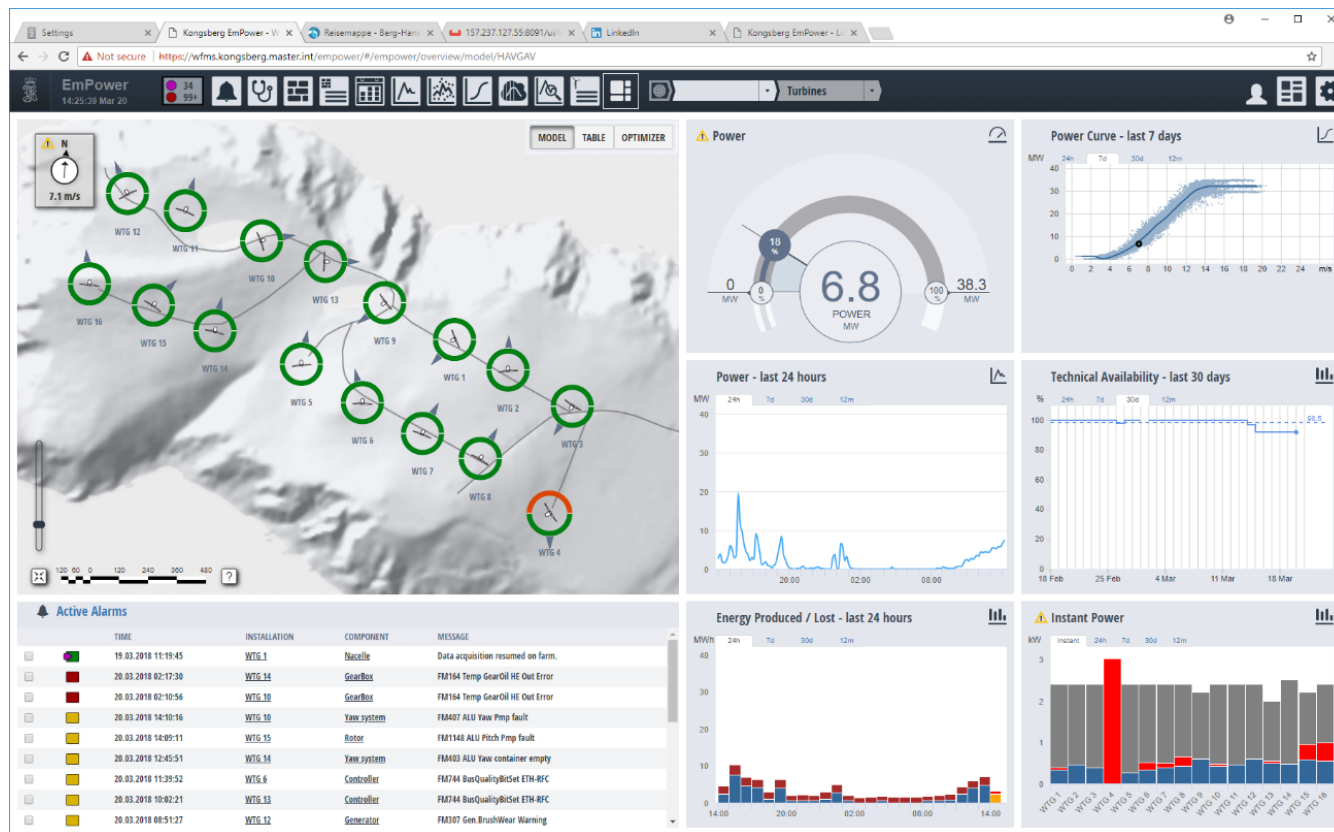
Kognifai in use – Vessel & Fleet Management



Kognifai in use – Windfarm Management



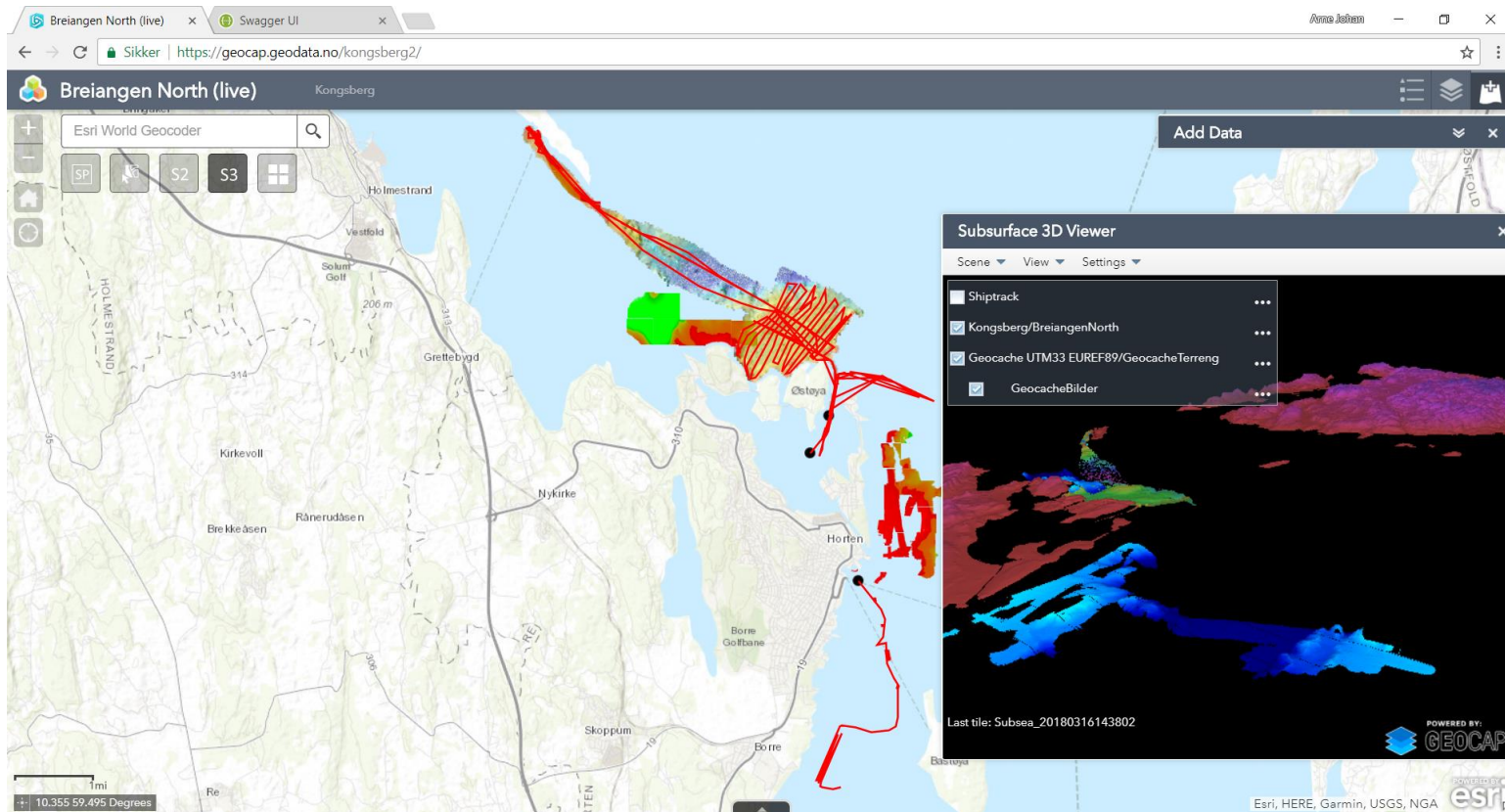
KONGSBERG



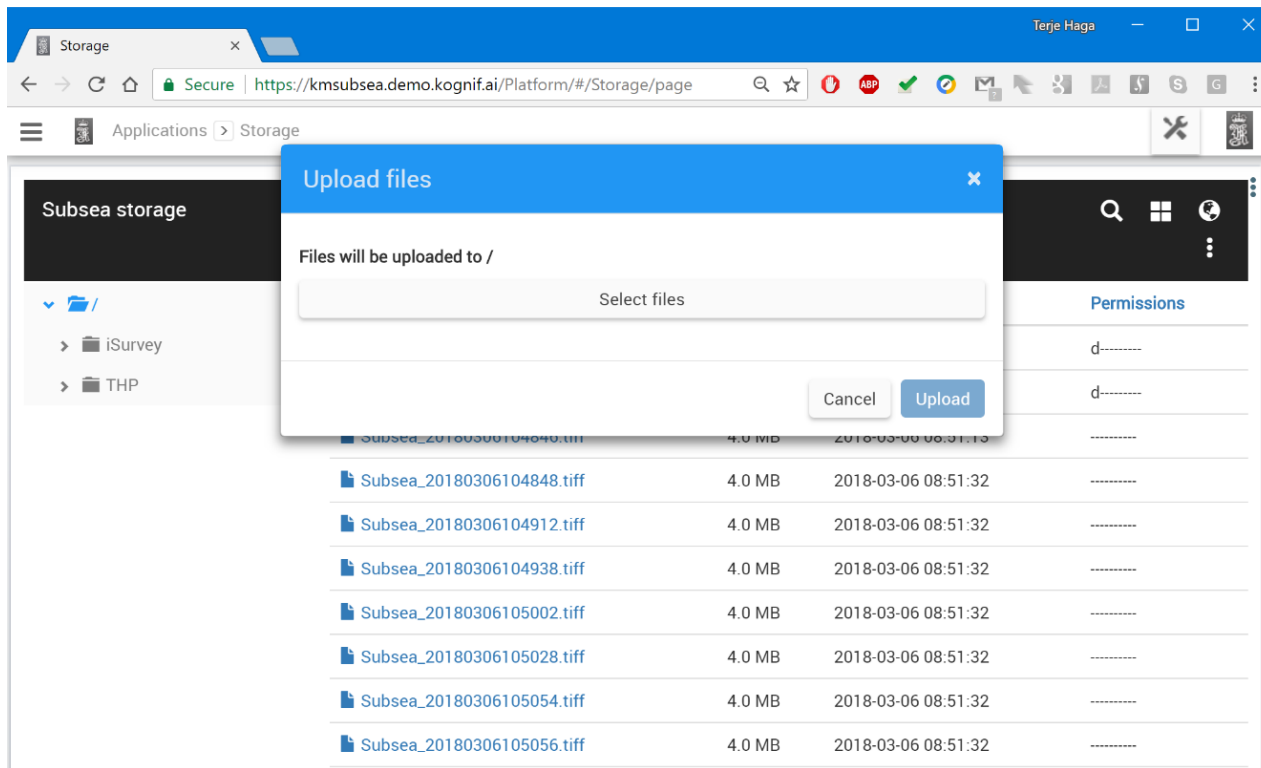
Mapping Cloud



KONGSBERG



Kognifai – File Manager



Kognifai – File Manager



KONGSBERG

Storage

Terje Haga

Secure <https://kmsubsea.demo.kognif.ai/Platform/#/Storage/page>

Applications > Storage

Subsea storage

	Name ▼	Size	Date	Permissions
▼ /				
> iSurvey	iSurvey		2:16:38	d-----
> THP	THP		2:16:38	d-----
	Subsea_20180306104846.tiff	4.0 MB	18:51:13	-----
	Subsea_20180306104848.tiff	4.0 MB	18:51:32	-----
	Subsea_20180306104912.tiff	4.0 MB	18:51:32	-----
	Subsea_20180306104938.tiff	4.0 MB	18:51:32	-----
	Subsea_20180306105002.tiff	4.0 MB	18:51:32	-----
	Subsea_20180306105028.tiff	4.0 MB	18:51:32	-----
	Subsea_20180306105054.tiff	4.0 MB	2018-03-06 08:51:32	-----
	Subsea_20180306105056.tiff	4.0 MB	2018-03-06 08:51:32	-----

Subsea_20180306105002.tiff (4.0 MB)

- Open
- Rename
- Move
- Permissions
- Compress
- Share
- Archive
- Mount
- Delete

<https://kmsubsea.demo.kognif.ai/Platform/>

Kognifai – File Manager



KONGSBERG

Storage

Terje Haga

Secure <https://kmsubsea.demo.kognif.ai/Platform/#/Storage/page>

Applications > Storage

Subsea storage

	Name ▼	Size	Date	Permissions
▼ /				
> iSurvey	iSurvey		2:16:38	d-----
> THP	THP		2:16:38	d-----
	Subsea_20180306104846.tiff	4.0 MB	18:51:13	-----
	Subsea_20180306104848.tiff	4.0 MB	18:51:32	-----
	Subsea_20180306104912.tiff	4.0 MB	18:51:32	-----
	Subsea_20180306104938.tiff	4.0 MB	18:51:32	-----
	Subsea_20180306105002.tiff	4.0 MB	18:51:32	-----
	Subsea_20180306105028.tiff	4.0 MB	18:51:32	-----
	Subsea_20180306105054.tiff	4.0 MB	2018-03-06 08:51:32	-----
	Subsea_20180306105056.tiff	4.0 MB	2018-03-06 08:51:32	-----

Subsea_20180306105002.tiff (4.0 MB)

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Kognifai – File Manager



KONGSBERG

Storage

Terje Haga

Secure <https://kmsubsea.demo.kognif.ai/Platform/#/Storage/page>

Applications Storage

Subsea storage

Subsea storage sidebar:

- Subsea storage
- iSurvey
- THP

Name	Size	Date	Permissions
iSurvey		2:16:38	d-----
THP		2:16:38	d-----
Subsea_20180306104846.tiff	4.0 MB	18:51:13	-----
Subsea_20180306104848.tiff	4.0 MB	18:51:32	-----
Subsea_20180306104912.tiff	4.0 MB	18:51:32	-----
Subsea_20180306104938.tiff	4.0 MB	18:51:32	-----
Subsea_20180306105002.tiff	4.0 MB	18:51:32	-----
Subsea_20180306105028.tiff	4.0 MB	18:51:32	-----
Subsea_20180306105054.tiff	4.0 MB	2018-03-06 08:51:32	-----
Subsea_20180306105056.tiff	4.0 MB	2018-03-06 08:51:32	-----

Context menu for Subsea_20180306105002.tiff (4.0 MB):

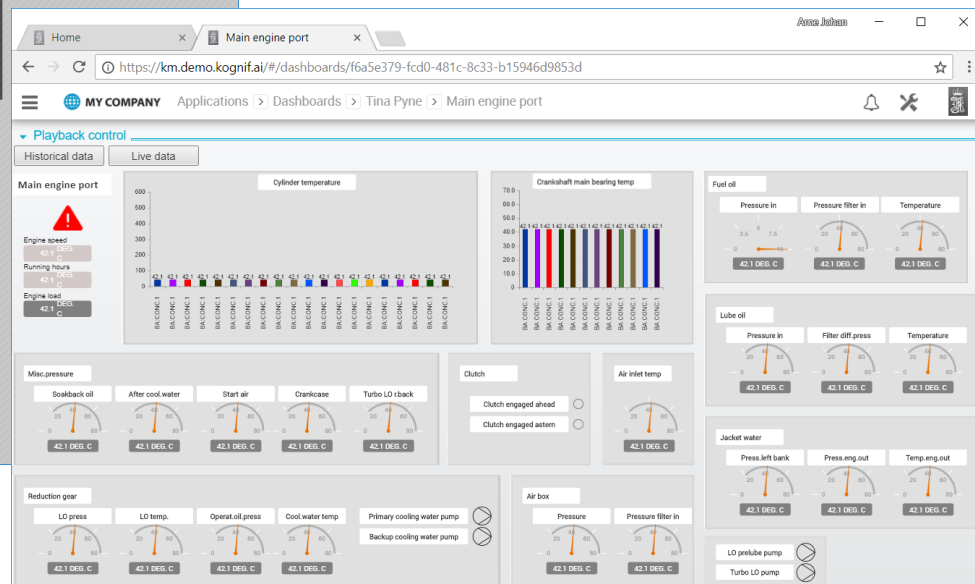
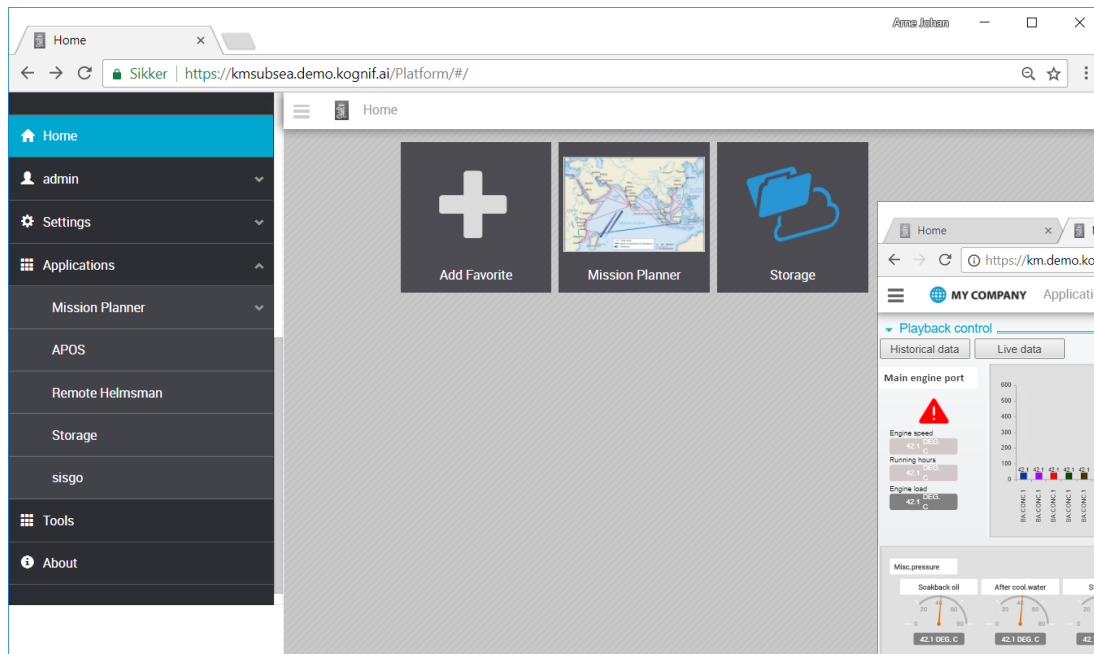
- Open
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<https://kmsubsea.demo.kognif.ai/Platform/>

KognifAi Application Framework



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Kognifai – Virtual PC



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The screenshot displays the Kongsberg Virtual PC environment. On the left, the Microsoft Azure portal is visible, showing a list of virtual machines under the 'Virtual machines' section. The VMs are:

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

In the center, a remote desktop connection is shown to a Windows VM. On the right, a pgAdmin window displays a SQL query and its results:

```
1 --Duplicate cleanup
2 --delete from depthdata.missionblobdata where mission_blob_data_key not in (
3 -- select max(mission_blob_data_key) from depthdata.missionblobdata group by st_extest(gem)
4 --)
5
6
7 --select *. from depthdata.missionblobdata order by mission_blob_data_key desc
8
9
10
11
12
13 --delete from depthdata.missionblobdata where mission_blob_data_key = 462
```

consumer_id	mission_id	created_date	mission_blob_data_key	geom	file_type	blob_id	name	description	uri
1	1	2018-03-20 13:24:46.225035	1071	010400002...	aff	224645...	Subsea_20180320...	Test	Subs...
2	1	2018-03-20 13:24:07.677178	1070	010400002...	aff	096578...	Subsea_20180320...	Test	Subs...
3	1	2018-03-20 13:23:06.596025	1069	010400002...	aff	2819ea...	Subsea_20180320...	Test	Subs...
4	1	2018-03-20 13:23:05.614648	1068	010400002...	aff	66023b...	Subsea_20180320...	Test	Subs...
5	1	2018-03-20 13:23:04.5214	1067	010400002...	aff	0dbd9d...	Subsea_20180320...	Test	Subs...
6	1	2018-03-20 13:23:03.520861	1066	010400002...	aff	189158...	Subsea_20180320...	Test	Subs...
7	1	2018-03-20 13:23:02.552109	1065	010400002...	aff	779a08...	Subsea_20180320...	Test	Subs...



Sharing data with Kognifai

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

Swagger UI

← → ↻ Sikker | https://kmsubsea.demo.kognif.ai/GISIntegration/swagger/ui/index#/ShipTrack

swagger https://kmsubsea.demo.kognif.ai/GISIntegration/swagger/docs/ api_key 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/{resourceUrl} Returns an overlay resource.

PlannedLines

Show/Hide | List Operations | Expand Operations

ShipTrack

Show/Hide | List Operations | Expand Operations

- 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

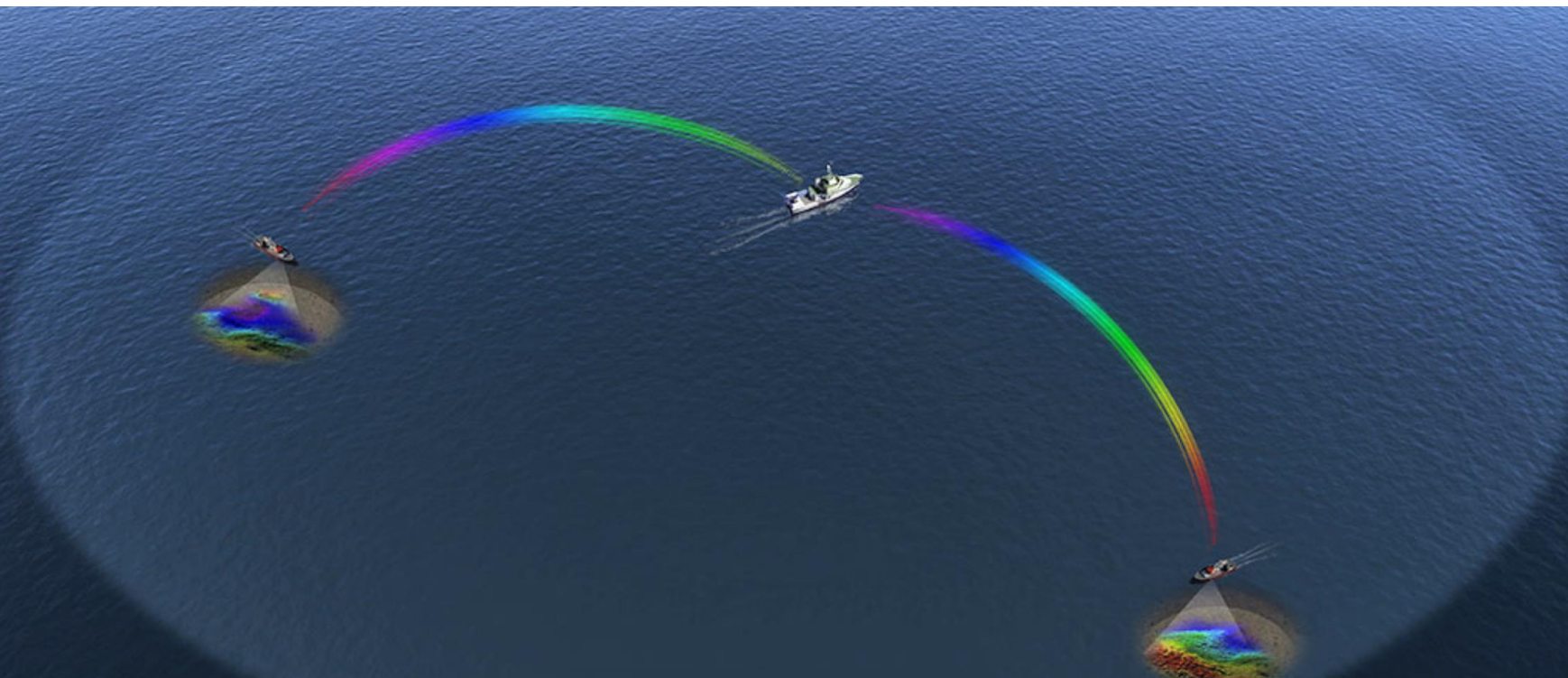
TerrainModel

Show/Hide | List Operations | Expand Operations

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

VALID [-]

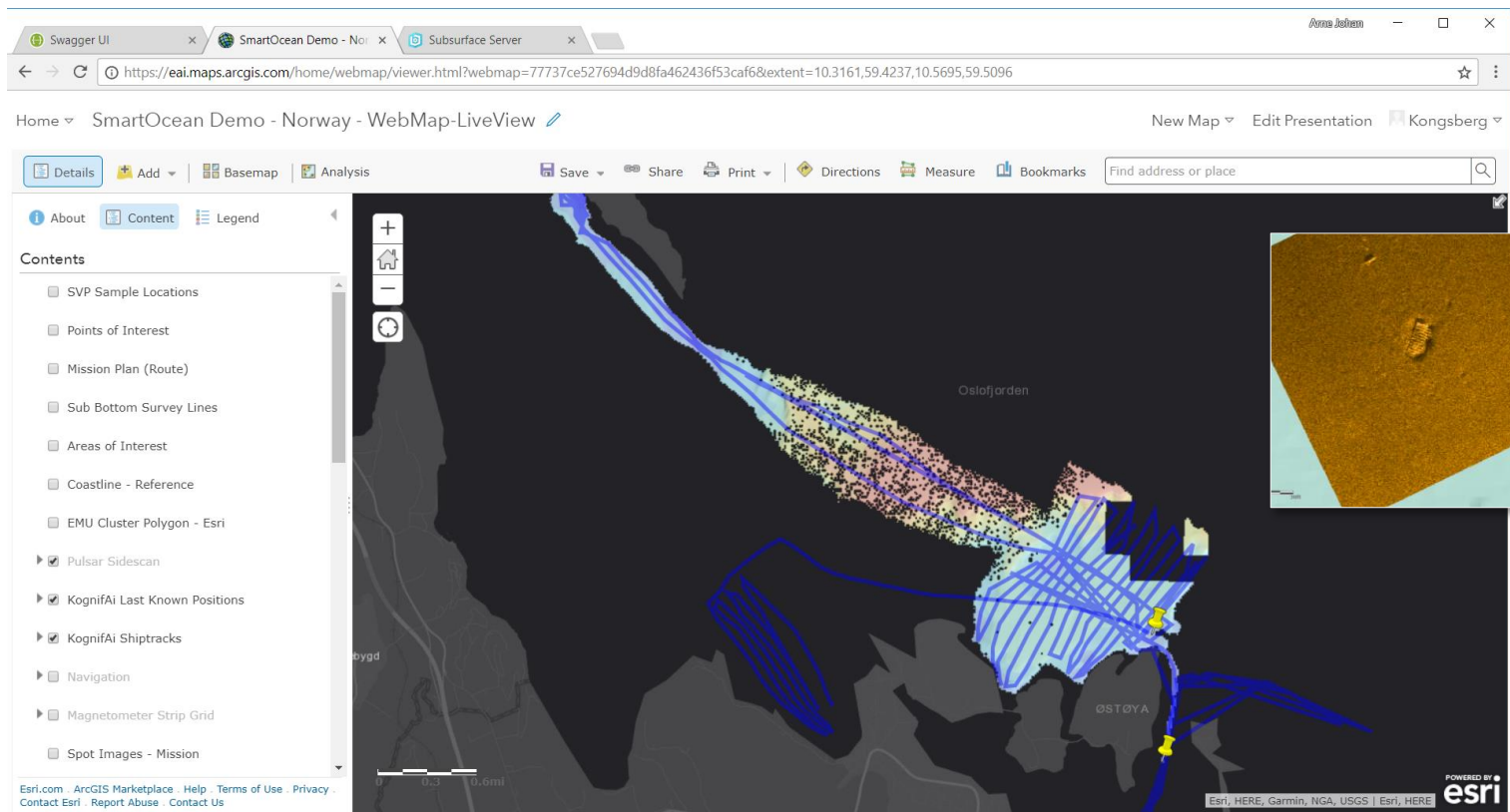
Ship-to-Ship Communication during subsea mapping Marine Broadband Radio (MBR)



Digital Ocean



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WORLD CLASS

THROUGH PEOPLE, TECHNOLOGY AND DEDICATION