



Mobile ActionLog App
sensor.awi.de → MALA → all the way back

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May 26, 2021

Outline

Various Parts & Requirements

Basic Functionality

- Sync Server

- Mobile Action Log App

Meta data *status est*

- ▶ DShip central tool on many platforms (PS, Neumayer, Heincke, ...) for logging (events, information, history, ...)
- ▶ coupled to sensor.awi.de →
 - ▶ automatic imports/syncs
 - ▶ seamless history of device
 - ▶ little effort for consistency
 - ▶ centrally managed
- ▶ centrally organized import to land-system
- ▶ generally easy going
- ▶ many groups/platforms cannot use DShip
 - ▶ land-based campaigns
 - ▶ small costal research vessels
 - ▶ joint operations
- ▶ field notebooks
- ▶ error-prone

Non-DShip approach:

sensor.awi.de intended to be the (first) sink for all metadata to collect, manage, coordinate, (re-)distribute, and share.

Meta data *status est* II

```
"event": {
  "startDate": "2020-01-01T14:10:00",
  "endDate": "2020-01-01T14:10:00",
  "label": "Test",
  "description": "string",
  "eventType": 0,
  "longitude": 0,
  "latitude": 0,
  "elevationInMeter": 0,
  "id": 0
}
```



```
nanselm@STERN5$ head -n5 station_prandtl
Station UTC start      UTC end Latitude (N)  Longitude (E)  Bottom depth (m)
P01  31.08.20 06:53  31.08.20 07:30  53.9023 8.7148  10.00
P02  31.08.20 09:16  31.08.20 09:30  53.9981 8.3974  11.00
P03  31.08.20 09:58  31.08.20 10:08  54.0058 8.2994  24.00
P04  31.08.20 10:29  31.08.20 10:38  54.0117 8.1972

nanselm@STERN5$ head -n5 station_littorina
Station ID  DateTime (UTC) surface, start - end  DateTime (UTC) bottom, start - end  Latitude (N) surface / bottom  Longitude (E) surface / bottom  Bottom depth (m) surface / bottom  Remarks
L-1_1  31.08.2020 07:03  31.08.2020 07:05  31.08.2020 07:07  31.08.2020 07:09  53.9040 / 53.9036  8.7114 / 8.7121  9  surface (1 m) bottom (7 m)
L-1_2  31.08.2020 07:17  31.08.2020 07:21  31.08.2020 07:22  31.08.2020 07:25  53.9030 / 53.9025  8.7128 / 8.7162
L-1_3  31.08.2020 08:44  31.08.2020 08:52  31.08.2020 08:52  31.08.2020 08:52  53.9828 / 53.9818  8.5360 / 8.5391  9  surface (1 m) bottom (7 m)
L-1_4  31.08.2020 09:46  31.08.2020 09:56  31.08.2020 09:56  31.08.2020 09:56  54.0533 / 54.0522  8.4237 / 8.4231  12  surface (1 m) bottom (10 m)

nanselm@STERN5$ head -n5 station_mya
Station ID  DateTime (UTC) surface, start - end  DateTime (UTC) bottom, start - end  Latitude (N) surface / bottom  Longitude (E) surface / bottom  Bottom depth (m) surface / bottom  Remarks
Stern5_M-1  31.08.2020 07:14  31.08.2020 07:21  31.08.2020 07:21  31.08.2020 07:21  53.9048 8.7049  13  surface (1 m) bottom (13 m)
Stern5_M-2  31.08.2020 08:13  31.08.2020 08:20  31.08.2020 08:20  31.08.2020 08:20  53.9494 8.6563  14  surface (1 m) bottom (13 m)
Stern5_M-3  31.08.2020 09:00  31.08.2020 09:08  31.08.2020 09:08  31.08.2020 09:08  53.9770 / 53.9757  8.5526 / 8.5570  11 / 11  surface (1 m) bottom (10 m) Vorbefahrt MS Helgoland un 09:02
Stern5_M-4  31.08.2020 09:56  31.08.2020 10:04  31.08.2020 10:04  31.08.2020 10:04  54.0003 / 53.9988  8.3806 / 8.3817  12 / 13  surface (1 m) bottom (11 m)
```

IceFloeNavi as Source

- ▶ MOSAiC IceFloeNavi
- ▶ relying on AIS technology → focus on
 - ▶ (pack) ice mechanics and movement
 - ▶ forecasting
- ▶ coupled with DShip ActionLog
- ▶ navigation via static grid
- ▶ some functionalities already tested
- ▶ rather ~~unstable~~ difficult to apply in a productive environment

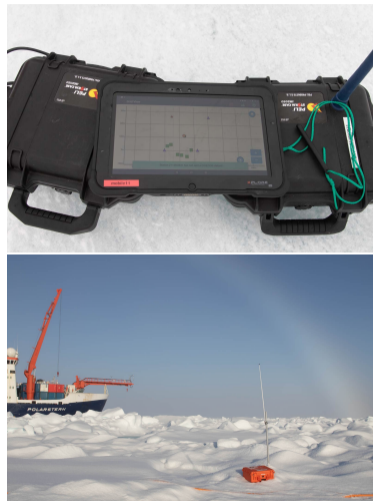
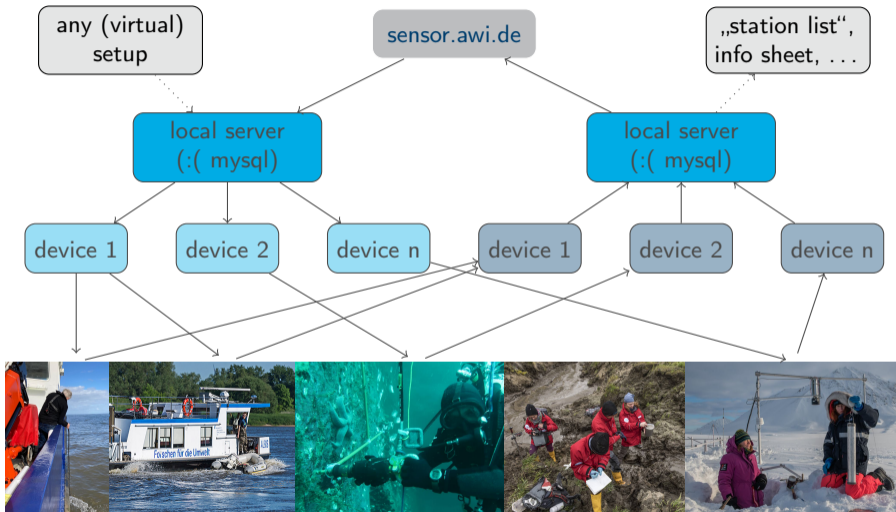


Fig: Photos by M. Nicolaus

- ▶ keep IceFloeNavi functionalities
- ▶ phone and tablet support
- ▶ managed/maintained centrally
- ▶ using device GPS
- ▶ modify entries after export from device
- ▶ various sorting and filtering options in app
- ▶ industrial partner: zuehlke.com

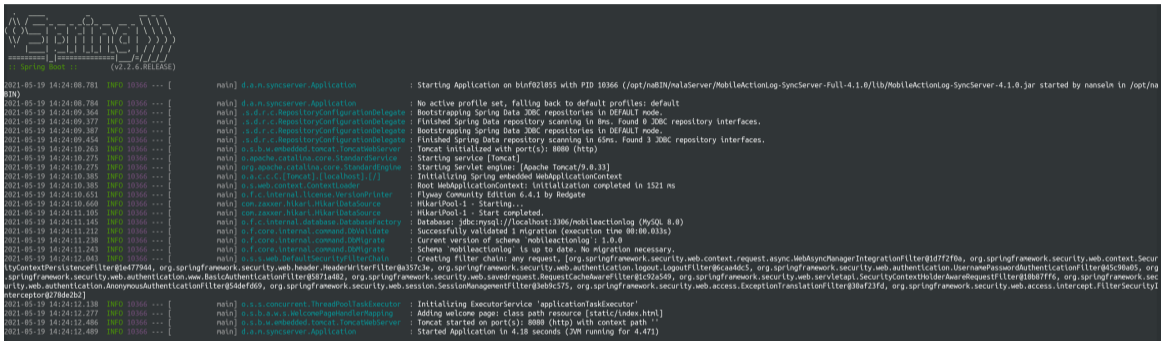


Everything starts with a server

- ▶ central entity to synchronize devices
- ▶ mysql, browser-based (localhost:8080)
- ▶ MS only, but after
 - ▶ finding and compiling proper mysql-libs
 - ▶ fixing time issue
- | SET @@global.time_zone='+00:00'
- ▶ killing process that blocks port 8080
- ▶ unofficial linux support
- ▶ configured via /etc/application.yaml

```
mobileactionlog:
  adminToken: <!-- -->
  app:
    adminPin: <!-- -->
    securityPin: <!-- -->
    mmsiMothership: 211221570
    maps: "../maps"
    writerUsername: writer
    writerPassword: <!-- -->
    adminUsername: admin
    adminPassword: <!-- -->
  database:
    mysql:
      host: localhost
      port: 3306
      schema: mobileactionlog
      user: "syncserver"
      password: <!-- -->
  logging:
    file:
      path: "logs"
```

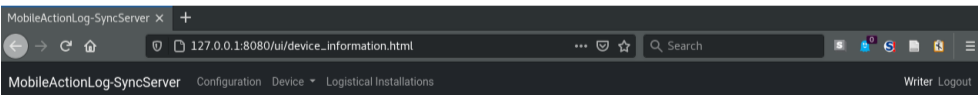

Everything starts with a server



```

11:41:17:44: [v2.2.6.RELEASE]
2021-05-19 14:24:08.781 INFO 10366 --- [
BIN)
2021-05-19 14:24:08.784 INFO 10366 --- [
nain)
2021-05-19 14:24:09.364 INFO 10366 --- [
nain)
2021-05-19 14:24:09.377 INFO 10366 --- [
nain)
2021-05-19 14:24:09.387 INFO 10366 --- [
nain)
2021-05-19 14:24:09.454 INFO 10366 --- [
nain)
2021-05-19 14:24:10.263 INFO 10366 --- [
nain)
2021-05-19 14:24:10.275 INFO 10366 --- [
nain)
2021-05-19 14:24:10.275 INFO 10366 --- [
nain)
2021-05-19 14:24:10.285 INFO 10366 --- [
nain)
2021-05-19 14:24:10.385 INFO 10366 --- [
nain)
2021-05-19 14:24:10.385 INFO 10366 --- [
nain)
2021-05-19 14:24:10.651 INFO 10366 --- [
nain)
2021-05-19 14:24:10.660 INFO 10366 --- [
nain)
2021-05-19 14:24:11.105 INFO 10366 --- [
nain)
2021-05-19 14:24:11.145 INFO 10366 --- [
nain)
2021-05-19 14:24:11.212 INFO 10366 --- [
nain)
2021-05-19 14:24:11.238 INFO 10366 --- [
nain)
2021-05-19 14:24:11.243 INFO 10366 --- [
nain)
2021-05-19 14:24:12.043 INFO 10366 --- [
nain)
2021-05-19 14:24:12.138 INFO 10366 --- [
nain)
2021-05-19 14:24:12.277 INFO 10366 --- [
nain)
2021-05-19 14:24:12.486 INFO 10366 --- [
nain)
2021-05-19 14:24:12.489 INFO 10366 --- [
nain)

```



Device Informations

 FilterUpdate

Feeding of the ~~5000~~ Sync Server

```
x <- getStuff('https://sensor.awi.de/rest/sensors/item/getItem/8046')
```

```
shortName: mbr179_awi_01
```

```
sensor.awi.de ID: 8046
```

```
longName: Maritime Broadband Radio (MBR 179 MK2)
```

```
itemType: broadband_radio
```

```
curl --request POST --url http://localhost:8080/devices --header "content-type: application/x-www-form-  
  ↳ urlencoded" --data DEVICE_ID=$itemID --data "DEVICE_NAME=$deviceName" --data DEVICE_SHORT_NAME=$  
  ↳ shortName --data DEVICE_TYPE=$itemType --data "ACTIONS=Configuration,Partial failure,Deployment,  
  ↳ Information,Total failure,Recovery"
```

MobileActionLog-SyncServer x +

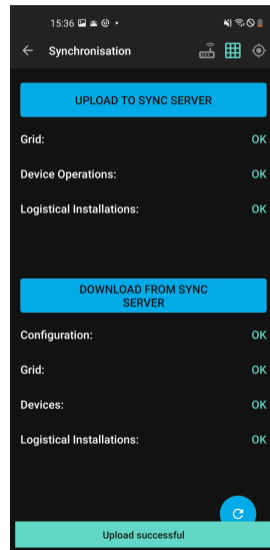
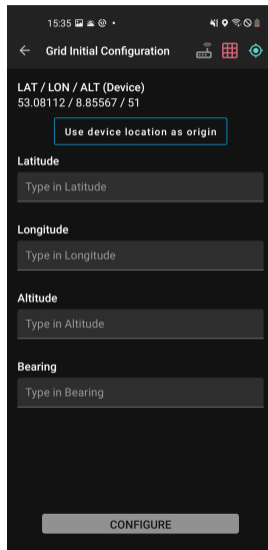
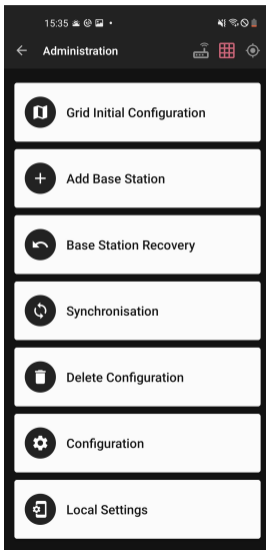
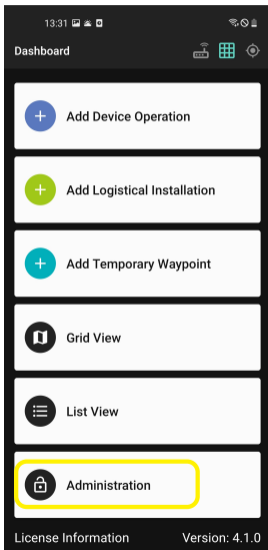
127.0.0.1:8080/ui/device_information.html

MobileActionLog-SyncServer Configuration Device ▾ Logistical Installations Writer Logout

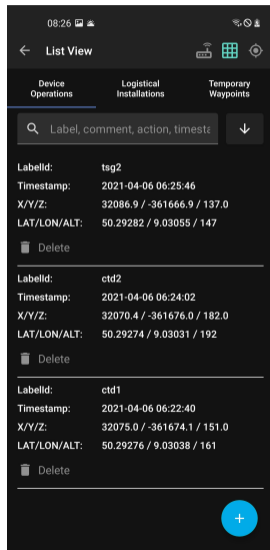
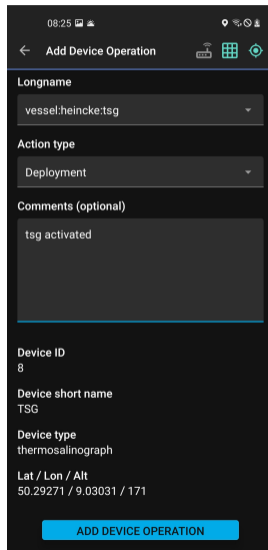
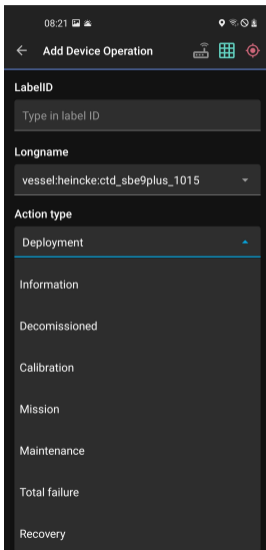
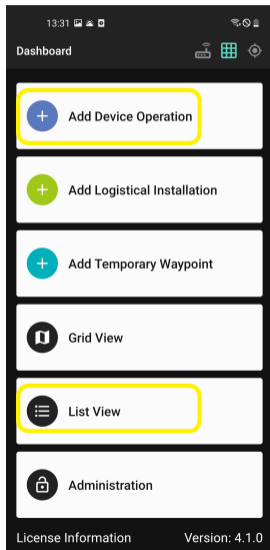
Device Informations

Id	Name	ShortName	Type	Actions	Deleted
8045	"reykjanes"	"reykjanes"	"vessel"	Partial failure, Deployment, Total failure, Recovery, Configuration, Information	false
8046	"Maritime Broadband Radio (MBR 179 MK2)"	"mbr179_awi_01"	"broadband_radio"	Partial failure, Deployment, Total failure, Recovery, Configuration, Information	false
8047	"AWI Intel Processing Unit 443 (01 codename Mya)"	"ipu443_awi_01"	"computer"	Partial failure, Deployment, Total failure, Recovery, Configuration, Information	false

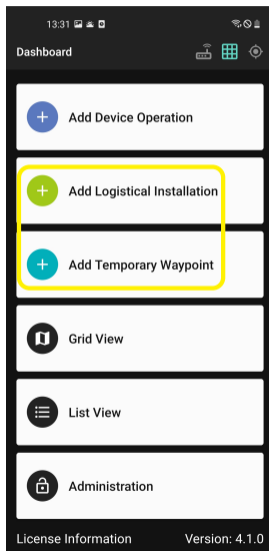
Initial Setup



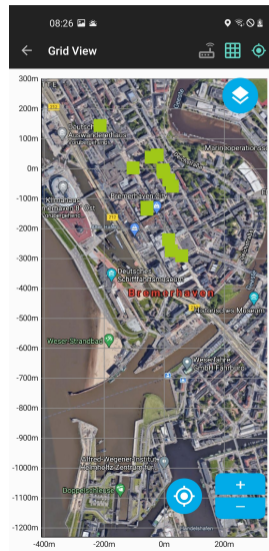
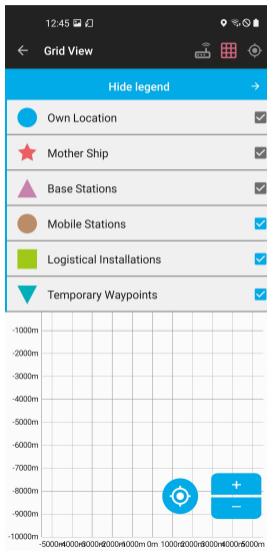
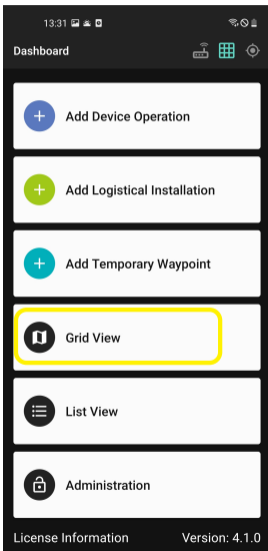
Logging Events



Installation & Waypoints



Gridview



Export & Last Minute Cleaning

 MobileActionLog-SyncServer Configuration Device Logistical Installations Writer Logout

Device Operations

ContentUpdate										FilterUpdate		
Uuid	Timestamp	Latitude	Longitude	Altitude	X	Y	Z	Label	Comment	Device	Action	ExportStatus
16556639-5417-402e-a78-97cee8fc7ff	2021-05-11T13:17:53Z	53.86318833333333	8.718971666666667	-8.1	93.48769142735662	-210.54694026422388	5.1	contact Hg lighthouse	from here slow internet access via lighthouse hg	8045	Information	Pending

 MobileActionLog-SyncServer Configuration Device Logistical Installations Writer Logout

Device Operations

ContentUpdate										FilterUpdate		
Uuid	Timestamp	Latitude	Longitude	Altitude	X	Y	Z	Label	Comment	Device	Action	ExportStatus
16556639-5417-402e-a78-97cee8fc7ff	2021-05-11T13:17:53Z	53.86318833333333	8.718971666666667	-8.1	93.48769142735662	-210.54694026422388	5.1	contact HLG Lighthouse	At rising tide antenna (installed approx. 8m a.s.l.) could connect to HLG Lighthouse at 2Mbps bandwidth. Quality was low to intermediate, but it was possible to connect to jira server on Helgoland .	8045	Information	Pending

```
wget -O exportedEvents.json http://localhost:8080/operations/json
```


Output – MALA

```

"event": {
  "startDate": "2020-01-01T14:10:00",
  "endDate": "2020-01-01T14:10:00",
  "label": "Test",
  "description": "string",
  "eventType": 0,
  "longitude": 0,
  "latitude": 0,
  "elevationInMeter": 0,
  "id": 0
}

```

```

[ {
  "id" : "16556639-5417-402e-af78-97cee8fc7fff",
  "timestamp" : "2021-05-11T13:17:53Z",
  "latitude" : 53.88318833333333,
  "longitude" : 8.718971666666667,
  "altitude" : -8.1,
  "x" : 93.48769142735662,
  "y" : -210.54694026422388,
  "z" : 5.1,
  "label" : "contact HLG Lighthouse",
  "comment" : "At rising tide antenna (installed approx. 8
    ↳ m a.s.l.) could connect to HLG Lighthouse at 2Mbit
    ↳ bandwidth. Quality was low to intermediate, but
    ↳ it was possible to connect to Jitsi server on
    ↳ Helgoland.",
  "device" : 8045,
  "action" : "Information"
} ]

```

write to sensor.awi.de:

<https://sensor.awi.de/rest/sensors/events/putEvent/8045?createVersion=false>

Output – sensor.awi.de – API

```
{
  "uuid": "0cd342b0-2094-431b-9183-955ff2ccca79",
  "startDate": "2021-05-11 13:17:53",
  "endDate": "2021-05-11 13:17:53",
  "label": "contact HLG Lighthouse",
  "description": "At rising tide antenna (installed approx. 8m a.s.l.) could connect to HLG Lighthouse at 2Mbit
    ↪ bandwidth. Quality was low to intermediate, but it was possible to connect to Jitsi server on Helgoland",
  "eventType": {
    "generalName": "Information",
    "description": "Describes issues associated with this item relevant for its operation. Includes failure and
      ↪ maintenance information. ",
    "id": 50
  },
  "latitude": 53.88319,
  "longitude": 8.71897,
  "elevationInMeter": 0,
  "id": 50884
}
```

Action info ✕

Overview

Resources

Relations

  Edit**ID:** 50884**Label:** contact HLG Lighthouse**Type:** Information**From:** 2021-05-11 13:17:00 UTC**Until:** 2021-05-11 13:17:00 UTC**Description:** At rising tide antenna (Installed approx. 8m a.s.l.) could connect to HLG Lighthouse at 2Mbit bandwidth. Quality was low to intermediate, but it was possible to connect to Jitsi server on Helgoland**Latitude:** 53.88319°**Longitude:** 8.71897°**Elevation:**

Cancel

Sounds wonderful, where to get it?

- ▶ gitlab.awi.de/data-logistics-support/MobileActionLog-App ← sources
- ▶ gitlab.awi.de/data-logistics-support/MobileActionLog-SyncServer ← sources
- ▶ gitlab.awi.de/data-logistics-support/MobileActionLog-Binaries_Utilities ← apk, documentation (could be better), and tools

- ▶ further testing
 - ▶ improve configuration
 - ▶ by scripts
 - ▶ by documentation
 - ▶ lacking features
 - ▶ debug
- ▶ easy to use tool
 - ▶ semi-easy to configure
 - ▶ homogeneous event lists in agreement with sensor.awi.de
 - ▶ reduction of error-proneness (e.g. latitude ↔ longitude, local time)
 - ▶ more metadata and item history == higher quality of data (?)
 - ▶ bulk imports/exports via sensor.awi.de API



Thank you