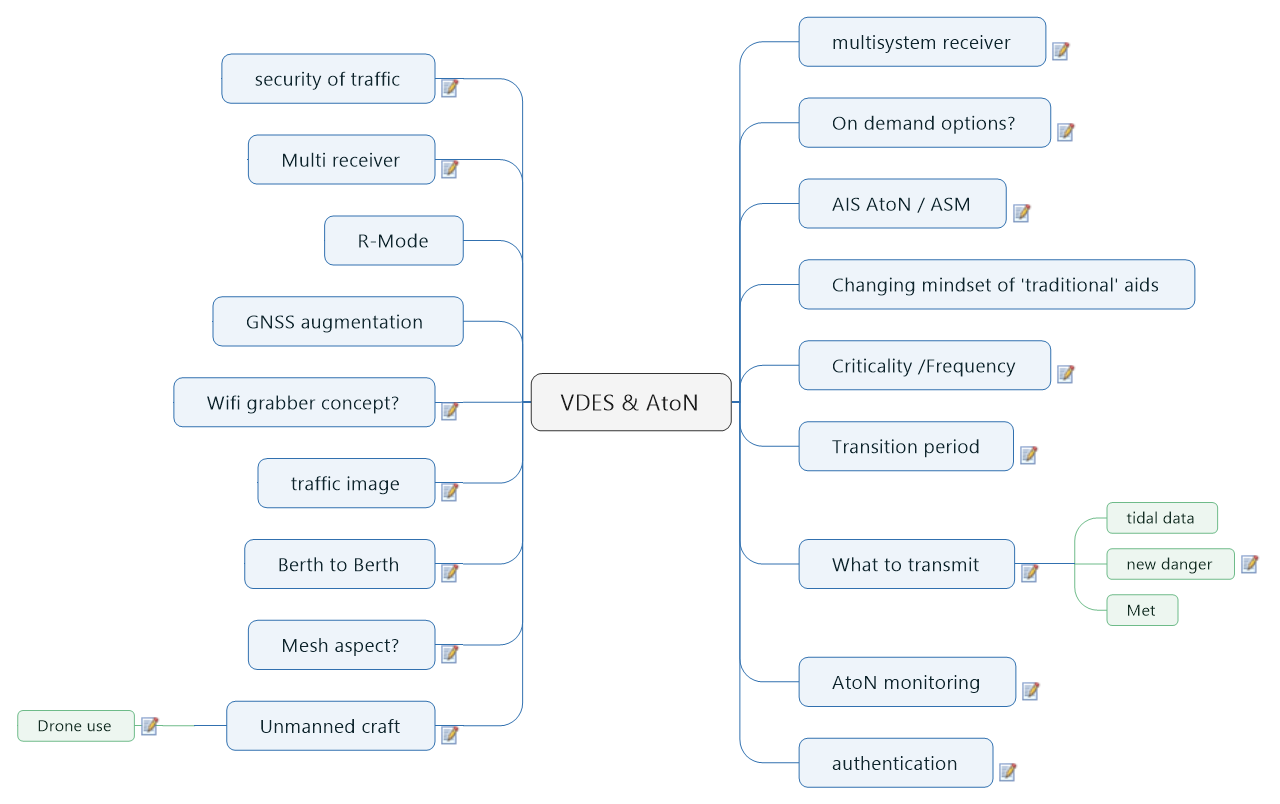
Please refer to the report of the workshop, ENAV20-4.5

VDES & AtoN

Results of discussions at IALA AIS AtoN workshop, Seoul, Korea, Oct 19-21 2016



1. multisystem receiver

discussion on GNSS alternative - eLoran / r-mode / whatever future system.

1. On demand options?

Real AtoN that have high power demands - turn off when not in use / turn on when required.

Have geofence / detect when a ship entering the area to turn on (save power).

[download of charts as required / where required]

1. AIS AtoN / ASM

Demonstration from Martin /Jan

Same user interface - ability to do virtual AtoN using ASM format

Change in understanding - virtual AtoN representing the MBS / ability of VDES to define an area - a type of virtual AtoN.

1. Changing mindset of 'traditional' aids
2. Criticality /Frequency

AtoN

What on AIS1 and AIS2

What is on ASM1 and ASM2

What is on VDE

1. Transition period

While VDES develops - might have data on both existing AIS and new ASMs...

1. What to transmit

Example - tidal data transmission (UKC) dynamic navigation areas

AccSeas test

* 1. tidal data
  2. new danger

timber falling off ship

Containers

* 1. Met

1. AtoN monitoring

Equipment becoming redundant? Savings may be realised?

With decent bandwidth - changes design philosophy - monitoring systems - less reliance on satellite and cell based AtoN monitoring.

Could reduce costs for monitoring (using VHF)

1. authentication

Specific reference to virtual - concerns over 'spoofing' and ensuring the AtoN is 'valid'.

Note difficult to stop 'jamming' but authentication can reduce chance of spoofing.

Note discussion of public key cryptography.

1. Unmanned craft

Could use VDES to support control / data to and from unmanned craft

communicate remotely - could include imaging; data; etc.

* 1. Drone use

Drone discussion (extended range - data exchange)

Deploy virtual AtoN beyond the range of a base station using the drone to extend range.

1. Mesh aspect?

use VDES equipped AtoN to extend range for communication

Perhaps Ship VDES stations could create a mesh (dynamic)

roaming capability concept? (hot spot?)

1. Berth to Berth

use of VDES AtoNs to assist with comms for berth to berth

1. traffic image

share VTS traffic image

ship unit creates its own traffic image / push information to VTS or other vessels

Complements other position systems.

1. Wifi grabber concept?

Simon (AMS) discussion - aggregating bandwidth in an area to form a single data stream

For maritime - bandwidth 'grabber' - prioritise bandwidth capacity.

VDES grabber concept? Critical incident in area, grab all available bandwidth for transmission of data?

1. GNSS augmentation
2. R-Mode
3. Multi receiver

Stand alone VDES / VHF (voice - digital)

hybrid - path management system, least cost routing - one / single unit for operator, backed up by multiple VHF receivers; multiple comms media options / least costly route automatically chosen.

1. security of traffic

creating ability to identify unwanted vessels in an area

example of security zone around offshore structure

Similar to aviation 'friend or foe' concept

Some work being done to link this into VTS / concept of a command and control centre.

Goal would be to reduce reaction time to unwanted vessels / breach of boundary.