Acronym Hell

GIS SSDM PODS HTML5 SOA FOSS What's it all about?

Presenter: Adam Davis



Wikipedia : A geographic information system or geographical information system (**GIS**) is a system designed to capture, store, manipulate, analyse, manage, and present all types of spatial or geographical data.

- Been around for some time but uptake was slow due to long-term use of CAD in Oil and Gas
- Disadvantage of CAD : data and presentation of data intertwined
- GIS is all about the data and NOT how it is presented
- GIS data can be easily searched.
- Access via Desktop or Web
- GIS is the cornerstone of storing and presentation of our spatial datasets.

What to put in a GIS

So if GIS is the tool of choice – surely I should just put everything into it?

NO!

There are data types that either can't be stored in GIS or are not a natural fit. Eg

- Digital Video
- High Resolution Bathymetry

Figure out what your chosen GIS system can sensibly store/present and then use or preferably LINK to specialist systems for advanced visualisation.

Also remember that the survey results are just that – results. A snapshot of a moment in time – they should not open to modification.

Import data into the GIS that is useful on it's own and can be easily visualised. Leave the original data in the original data container and use it's own (often free) visualisation engine.

GIS with External Applications



What to put in a GIS - Example

Pipeline Video Inspection Survey

Import

- As-Found Position of Pipeline
- Point Events Damage, Debris, Anodes
- Linear Events Spans, Rock Dump

Leave out

- Cross Profile Data
- ROV Track
- Digital Video
- DTM

What to put in a GIS – Example 2D

Prefer to see this (Esri ArcMap)



What to put in a GIS – Example 3D

Or this (Esri ArcScene)



What to put in a GIS – Example 3D with Video

Or this (VisualSoft)



GIS with External Linked Applications



Esri ArcMap Linked with Digital Video Dataset



Data Models

Helpful in both deciding what to put in a GIS but also how data should be formatted

SSDM - Subsea Survey Data Model

(the before you put anything on the seabed Data Model)

http://www.iogp.org/p-formats/SSDM OGP Geomatics KL Meeting 12102012.pdf

PODS - Pipeline Open Data Standard

(the after you have put something on the seabed Data Model) http://www.pods.org/wp-content/uploads/2015/06/PODS_6.0v_FINALforWeb.pdf

Note there are other Pipeline Schemas; Esri's APDM

Integrating SSDM and PODS

http://www.ogp.org.uk/pubs/462-03.pdf

There is quite a bit of confusion about Data Models

- They are not as bad as they look!
- Data Models are a starting point and are expected to be extended.
- Data Models documents can be difficult to "translate" for actual usage it's not easy to put the correct value in the right field. A fully worked example would remove a huge amount of ambiguity in what is expected in the data delivery.
- Fully worked examples should be created and published for each Model.
- Either by IOGP/PODS for a public audience anonymised
- Or by the Operator as part of the Contract/Scope of Work could contain proprietary information

Current State of Play

SSDM

• SSDM is now well established and IOGP has some great documentation

PODS

- PODS is the Intellectual Property of PODS Association Inc. In order to use PODS you must be a member with annual subscription fees.
- PODS was designed for "Onshore" and has many tables that can be ignored. PODS is working to reduce the complexity by modularising so you can focus on only the areas you need – PODS "Next Generation".
- There are "Offshore tables" these were donated to PODS by BP and have been "generified" by a PODS Working Group due for release end of 2016.
- Therefore maybe too early for some without Professional Help!

Can a one line "Data to be delivered in PODS" be added to a Scope of Work? Does that even make sense?

Most of the time – no! Why? Data is linked by Keys

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The Mine in Events Table has a "PipelineName" Field value of "PL-A to PL-B" and looking in the Pipeline Table there is a corresponding entry in the "Name" Field that shows it's owned by "Shell" and it's a "Gas" line

Cue panic.

Actually we don't use names, we use GUIDs (Globally Unique Identifier). They are barely humanly readable but do exactly the same job.

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Grasp this point and you are most of the way to understanding Data Models!

Data Models – PODS

So PODS Data is not designed to be "on it's own".

- The Operator should have an existing PODS database with Pipelines
- Each Pipeline has it's own GUID.
- If that information is not available the Subcontractor cannot add the required GUID to the Events Table linkage broken.
- It is acceptable to add temporary fields that details the Pipeline that the Event is associated with as....
- The Operator is always going to have to load the data into their corporate data store and there will always be an element of ETL (Extract, Transform, Load)
- Operator should provide template Geodatabase (or even Excel files) with appropriate tables/fields present and required pipeline information included
- Operator then has internal processes to load that data into their corporate data store.
- The data provided is essentially an exchange format.

HTML5

Wikipedia: HTML5 is a markup language used for structuring and presenting content on the World Wide Web. It is the fifth and current version of the HTML standard.

HTML5 is a standard that Browser Manufacturers are expected to implement. Only the latest Browsers have HTML5 sufficiently implemented and not all Browsers have all the functionality.

Why do we need it?

- Web applications via a Browser or Apps have become ubiquitous in our personal life with content-rich consumer-oriented websites.
- HTML5 can enable the same rich visualisation experience in the corporate arena.

What do we need to do?

• We ALL need to instruct IT to install modern Browsers as standard.

HTML5 Clients

• Internet Explorer 10/11

• Google Chrome (recent)

• Apple iOS 8/9

• Mozilla Firefox (not recommended)









3D – Autodesk A360



https://s3.amazonaws.com/FastViewer/index. html?file=frontloader/0.svf

3D – Autodesk A360 – Exploded Model



https://s3.amazonaws.com/FastViewer/index. html?file=frontloader/0.svf

3D – Autodesk A360



http://a360.co/10s2cJ5

Wikipedia: A **service-oriented architecture** (**SOA**) is an architectural pattern in **computer software** design in which application components provide services **to other components** via a communications protocol, typically over a network. The principles of **service-orientation** are independent of any vendor, product **or technology**.

A mentioned before GIS is the cornerstone of our Spatial Data and our data access.

Start with Web GIS and then add services are added as required.

They will communicate via position or time. Any service can broadcast a position or time and all other services will update accordingly.

Digital Video with GIS and 3D Viewer



Digital Video with GIS and 3D Viewer Example



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What can we Expect in the Future

- This is a new field so we have a multitude of services provided by different Vendors offering different Purchase/Subscription Models with different selling points.
- Purchase Software place on Server/Cloud (Esri ArcGIS Server / Wish Software)
- Subscribe to a Service (Esri ArcGIS Online / Autodesk)
- As part of Services provided to Operator (LR Senergy / Oceaneering)
- Repeat of when each Survey Company had their own Survey Acquisition Package. Survey software has become sufficiently commoditised - nobody would make their own from scratch.
- Give it 10 years and we will be in the same scenario.
- Each acquisition vendor will be providing a Service that allows streaming of their datatypes to the Browser.
- XTF Sidescan Viewer / Player
- Integrity Management Databases
- In-line Inspection (ILI)

Lynx WebSeisView and WebLogView



https://data.lynxinfo.co.uk/apps/weblogview/ egypt?request=getLogview&logId=1 **Free and open-source software (FOSS)** is computer software that can be classified as both free software and open-source software. That is, anyone is freely licensed to use, copy, study, and change the software in any way, and the source code is openly shared so that people are encouraged to voluntarily improve the design of the software.

There are as many people as there are opinions on what FOSS actually means!

A common way to think about it is...

"think of free as in free speech, not as in free beer"

There are many, many reasons why projects are or become Open-Source.

We are Commercial Entities – Should we use it?

We already do and there is no reason why we should not be we need to be careful.

Licencing

There are a number of different Open-Source licences and it can be difficult to ascertain whether we are complying properly.

Ethics

Whilst we may be complying to the strict letter of the law when using Open-Source software we need to also consider the ethical side. Open-Source is commonly about community and sharing and "giving-back"

We all want to be Corporately Responsible...

FOSS

What should we "Give Back"

Advocacy



• Help – Adding our own updates or helping fix bugs.

Each project is different and once we step out of the paid for proprietary world we must take the time to assess each project to look at the aims and the ethics of the team that is making their work available.

If you use it and there is a DONATE button then PAY FOR IT – it should be a significant amount!