



6th OceanSITES Data Management Team Meeting

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Location: Seoul, South Korea

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Meeting information: <http://www.jcomm.info/oceansites2013>

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Welcome, Introductions, Review of Agenda

The DMT Meeting took place for 2 days following the OceanSITES Steering Committee Meeting. The Co-Chair of OceanSITES, Dr. Uwe Send welcomed all members to the meeting which was the first face-to-face since the Dec 2011 Meeting in La Jolla. The Data Management Team (DMT) continued to be active via teleconferences during this time but continues to operate without leadership following the vacancies left by Bill Burnett and Sylvie Pouliquen in 2011.

The meeting of the DMT was held over 2 days with a very full agenda. The main agenda items were:

- **Website Updates**
- **Data Management Team Leadership**
- **OceanSITES Data Archive**
- **GDAC Updates**
- **OceanSITES User's Manual and other Documents**
- **Sediment Trap and PIES Data submission**
- **Data Holdings**
- **Document Object Identifier (DOI) for OceanSITES data**
- **Historic Weather/Ship Information**

1. Review of OceanSITES Data Management Structure

Matthias Lankhorst reviewed the current set up of the data system and reviewed responsibilities for PIs, DACs and GDACs for new members (Figure 1). Outlining the role of the PI, DAC, and GDAC. There was some confusion over the role of a Data Assembly Center (DAC) and who could become a DAC. It was indicated that an individual PI could be their own DAC. The DMT needs to ensure that this wording is clear in the Data Reference Manual.

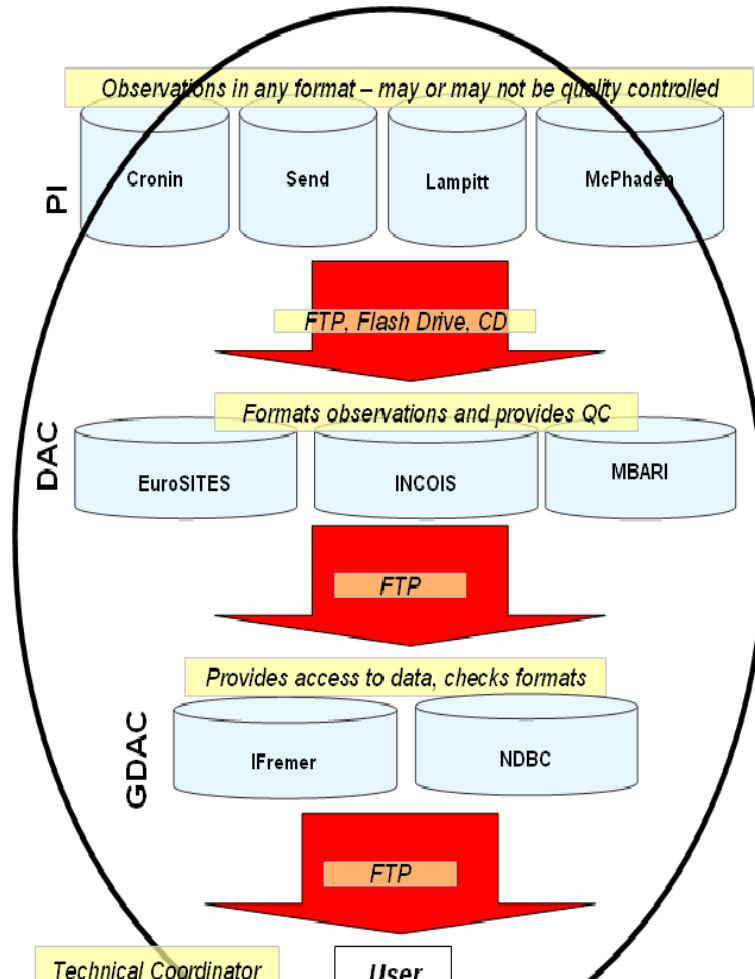


Figure 1: Current Architecture of GDAC, DAC and Data Providers. The PI and DAC organizations listed are only a few examples from a larger set of PIs and DACs. The Technical Coordinator supports the entire operation.

2. OceanSITES Project Website

- Status of current website, where hosted, how content is managed
 - Review recent updates to website
 - Approve recent changes / discuss need for further modifications
 - *Deliverable / desired outcome: clean, up-to-date, approved website*
- The website was transferred to JCOMMOPS after the last OceanSITES meeting in La Jolla. It was previously managed at WHOI, but as the project office maintains the sites, it was moved to JCOMMOPS in Toulouse.

- The general agreement was to keep the website as simple as possible as we do not have full dedicated funding for these updates.
- Prior to this meeting several members of the DMT proposed changes to the websites. Kelly, as project office, will make the recommended changes and send the development site out to members to review. Action – end of June.
- Examples of some changes are:
 - Remove the news items from the homepage and move to side bar
 - Add main map to home page
 - Update global network map and make interactive, if possible
 - Update data page so that it includes information about data and not documents
 - Update meeting page and add meeting reports to this page
 - Remove the “team” page and add all to contacts
 - Check all links and update where appropriate
 - Obtain input from Executive Committee on the “About” page
- The idea of using a Content Management System was still discussed. At this time JCOMMOPS is not moving in this direction. However, there could be some ways to improve and give access to other members in the future.
- The idea of a Wiki was also discussed
- Members would like to see more examples on the site of scripts used to format data. The team was reminded of the use of Alfresco and Mantis for document and action item tracking. Scripts are kept in Alfresco but we can add more.
- The map was discussed in this forum. What do we actually want on the map? The map should be automatically generated and files should be automatically added and updated. 2 databases that feed the dots on the map – one pulled from the GDACs and 1 pulled from the planned sites and those that have not yet formatted the data. Currently the project office maintains a database with the catalog. Sites that are not in a GDAC should have an open circle.
- There should be a clear area on the site that describes the definitions and a glossary

Action – an additional document that is a quick start document or mini-manual with screen shots. A draft version of the ‘quick start user manual’ was completed on day 2, to be reviewed in the DMT webex meetings.

3. Data Management Team Leadership

The Data Management Team has been very successful over the years as getting things done and has managed to continue with monthly teleconferences despite not having leadership. The DMT needs to work with the data providers on naming issues related to site and platform name to ensure consistency. This requires that there needs to be more overlap between the data management and the scientists.

- In La Jolla, an interim “board of chairs” was assigned to keep momentum going. The members are:
 - Thierry Carval, Maureen Pagnani, Nan Galbraith, Matthias Lankhorst, Jing Zhou
- Is there a new chair in sight? What actions are being taken to find one? How is (s)he to be funded?
- Discussion on the profile of what the leadership might look like. What is the profile? This person should have the technical skills and data skills. Someone with funding, someone that can get things done and has a staff to get tasks done. This person needs to have time to spend on this.
- Some possible suggestions were to look at NODC, EMODNET, India?
- In the meantime, the interim group of chairs should distribute specific tasks amongst each other. For example:
 - Consolidate edits to manual – Nan G

- Guide data submitters thru process, help with netCDF – Matthias
- Moderator for monthly telecom – Maureen P (tech assist by Kelly)
- Action items on Mantis (follow up mark as complete when done) – Thierry C
- The Chair should rotate through these roles.
- The role of the DMT chair need to be defined and is this something that JCOMM could take on?
 - i. **Action** – restructure the chairs so that people take on these different tasks
 - ii. **Action** – define the role of the DMT Chair
- Without an allocated DMT Chair, what is the approval process of documents, decisions within OceanSITES?
 - What is this process now? To talk about it until nobody objects? We need a committee that would specify this
 - Thierry – if the DMT board of chairs agrees then the document is agreed upon
 - Molly – simple majority of the chairing board and simple majority of the exec team but strive for consensus. Try to agree within the committees
 - Mike - is there guidance from JCOMM on this. We do not have a formal charter like the DBCP.
 - Uwe - we made a bottom up process.
 - Matthias - We need to add this into the How to Document
 - **Action – make sure there is guidance in the how-to document**
 - How are these enforced? What is the hierarchy of documents?
 - Same comments as above

4. Data Archival at NODC

In the 2011 OceanSITES Meeting in La Jolla it was discussed that the OceanSITES data should have an official archive. The NOAA National Oceanographic Data Center (NODC) has agreed to this role as part of the World Data Center. Mr. Charles Sun presented a document on what is needed from OceanSITES and is included in Appendix A.

- The NODC plan was reviewed
- NDBC as the GDAC will work with NODC to provide a submission information form (SIF). There was concern if NODC was also distribution the OceanSITES data.
 - No. NODC is not also planning to serve that data. They will copy the file onto their archive system. You will have to go to the Ocean Archive System (OAS) – the user will have to go to this system to get OceanSITES data and into the world ocean database
 - Roger raised the question on submitting their data to NODC and then to NDBC. If the OceanSITES format were acceptable to NODC then could NODC pull the data for both? Diane commented that one of the requirements from the Program Managers and NSF is to provide the data to the NODC. These data would have to be made available and submitted both ways.
 - There was concern that there might be objections from NODC on the OceanSITES format? No. NODC will archive the data as submitted.
- Data would be pulled from the GDAC (likely NDBC) and archived at NODC daily. The off-site copy would be created 1 time per month at NODC.
- Mr. Sun indicated that the prototype would be available in the Fall and the full archive would be functioning in early 2014.
- Action – add appendix to report for NODC Archival process.
- Action – follow up with NODC on the flow and format. Goal set up in Fall and up and running in start of 2014.
- Action – find out for sure if NODC will serve data

5. GDAC directories for gridded/combined files and derived products

There was a lengthy discussion on whether OceanSITES should host gridded or derived products and what would the directory structure look like for these.

Matthias reviewed the file format for OceanSITES data

- Data in netCDF files with CF metadata conventions
- Adding further metadata beyond CF, nomenclature in User's Manual
- Data in native resolution in space and time, physical units of primary measured parameter
- One file per deployment (or multiple files if data on different x, y, z, t, axes)

There were questions discussed on different time axis and how a combined file would deal with this. For example, time difference in microcats. OceanSITES follows a subset of the v.1.6 CF convention

The DMT needs to take the lead with the CF rather than having a freeform. If you measure something that you don't know the standard name for, contact the DMT (Matthias, Nan, Maureen) and they will contact the correct community for the correct name.

Tom - Every CF standard name that has been used by **a provider of OceanSITES member be listed on the OceanSITES website in a list/table.**

Thierry – GDACs could run a script to check whether the files they have are correct and extract a list that shows the parameter and the standard name

There are issues with providing aggregated files. The metadata and attribute information cannot be carried on and non-aggregated files are more closely related to the sensor, instrument.

It is very important that OceanSITES serves the high-res data per deployment there is agreement on this. Meghan absolutely agrees that this is the case.

Perhaps we can accomplish both. The aggregated dataset should have the provenance to the original high resolution data

Possible file structure – the following was discussed but deprecated. An alternate is given below.

- ~~Subdirectories on GDACs~~
 - ~~DATA~~
 - ~~Deployment by deployment~~
 - ~~Sensor information~~
 - ~~Original resolution~~
 - ~~DATA_GRIDDED~~
 - ~~Averaged and/or gridded data~~
 - ~~DERIVED_PRODUCTS~~
 - ~~Discussion on the difference between salinity and heat flux calculations. The salinity calculation is an international standard and the difference is that there could be 5 different products with different algorithms measuring heat flux. Fluxes are a considered a product by the community in the room.~~
 - ~~Sub folders~~
 - ~~Individual platform products~~

- ~~○ Non-standard computations, scientifically new data products~~
- Multiple platform products
- ~~○ Combines data from multiple platforms~~

The topic needs much more discussion as several users are convinced that the structure should exist under 1 site. We have to be careful what we think the users want and perhaps a solution is to put soft links. The GUI interface for searching is needed so that user's do not have to know or think about where to go to find the information they want.

Alternate structure for subdirectories on GDACs –

- SITE
 - OS_PLTFRM_DPLMT_D_Descr.nc
 - GRIDDED/OS_PLTFORM_MERGED_G_Descr.nc
 - PRODUCTS/OS_MULTIPLE_MERGED_Descr.nc -> .../MULTIPLE/..
- MULTIPLE
 - OS_MULTIPLE_MERGED_Descr.nc

What file formats should be used?

- File format for Gridded – what do these files look like? Let the PI or DAC use any Netcdf convention and point back to the original data files. Other than that, there can not really be any further structural requirements.
- Any netCDF that...
 - Follows CF metadata, ACDD, and UDunits conventions
 - Lists in the metadata the originating source data (files). E.g the OceanSITES deployment-by-deployment files if it was created from such files
 - Follows file naming conventions

Action - we need to discuss this and figure out a plan to move forward. Will it be within the site or at a higher level

Action – continue to provide highest resolution data and look into provenance to track to aggregated datasets.

6. OceanSITES User Manual

The DMT spent time reviewing Version 1.3 of the OceanSITES Manual. The discussion took place in 2 separate agenda items and thus members had a chance to review the document and provide feedback. Several changes had been recommended since 2011 and Nan Galbraith has spent time incorporating them into the document.

Several main points were discussed in the review of the document:

- Who is the main audience (data providers or outside users) and how is this reflected in the manual?
 - It was decided that a simple 1 page in front that provides a bit of an overview at the start is needed. Who it's for and why.
 - People need instructions that are easy so they do not give up before getting started.
 - This discussion prompted the decision that the data providers are the primary audience of this document and we need a separate data document for the users of the data and thus should be renamed to the "Data Reference Guide"

- What standards are being followed (CF, Unidata Dataset Discovery)?
 - ACDD - Attribute Convention for Dataset Discovery
 - COARDS data conventions – we need to reference this but COARDS is really the predecessor of CF
 - CF 1.6 includes all the discrete geometry types
 - UDUNIT library: <http://www.unidata.ucar.edu/software/udunits/>
 - OceanSITES must use the canonical units associated with each CF standard name, but the factors may change, so that microgrammes used instead of kilogrammes. cm^2 instead of m^2
 - The CF unit indicator for dimensionless variables is 1

- Which types/versions of data are being distributed (best available at instrumental resolution in space and time, gridded/combined versions and derived products at discretion of PI, not raw data, not complete back-trace to raw data)?
 - There was no objection to this back trace to raw data

- SensorML
 - Matthias presented an update on SensorML
 - This was an initiative that was started several years ago and was too complicated and specific for machine for machine but not human to human. Manufacturers are sending sensor calibration information
 - The OceanSITES netCDF files can already hold this information.
 - Recommendation - We should remove this from documentation and terminate any ongoing development efforts

- Differences between CF versions – desired capability to use any one that PI chooses. Instructions to use “featureType” attribute for recent CF version.
 - Is the way we have written the current CF format all encompassing enough for capturing the new version?
 - Jing has a template of how generally people like to have the data structured and NDBC has this document online
 - It would allow to include the drifting sediment trap information and things that are crawling up and down a wire
 - Are there any incompatibilities that would prohibit us from this?
 - This clears up how you represent that data at a nominal position and still record the tracks of the mooring etc.
 - (Jim) - There are client tools that expect data to have x,y,z. This convention might not work with some tools. COARDS software, for example, will not understand the new convention.
 - Do we want to recommend that people still include coordinate attributes? This makes the application reader simpler.
 - Recommendation - OceanSITES should allow any CF convention as long as you state what convention you are using. Review our document to take advantage of the scripts

- OceanSITES documents
Based on the discussions, it was recommended to revise or create the following documents:
 - 1) Data Reference Manual (ex. User manual)
 - i. Compliance with CF, ACDD, UDunits (Mike Mc)
 - ii. New kinds of files - gridded, products (Thierry)
 - 2) How to Access Data (tom T)
 - 3) How to Become an OceanSITE
 - 4) How to Work with a GDAC (Jing, Matthias)

1. During the meeting, a draft “How to Access Data” document was prepared and reviewed. This document will be vetted by the DMT and approved.
 2. During the meeting Matthias reviewed and revised the How to work with a GDAC.
 3. The team also discussed the brochure. This document was created by WHOI years ago and should be revisited. This would serve as a great “Introduction to OceanSITES”
- As part of the Manual, we still need to define Terms of Reference for OceanSITES.
 - **Action Items:**
 1. Create this new 1 page document for data users (those that are downloading OceanSITES data)
 2. Update OceanSITES manual to include discrete geometry
 3. Provide guidance on what we want users to use for salinity. A new field in the attribute table that we want users to use 1 for salinity and uunits for the others.
 4. Review and approve all documents, DMT and Executive Committee Members, Fall 2013
 5. Create a draft OceanSITES ToR

7. Sediment Trap and PIES data

Matthias reviewed the How to Document for Pies and Sediment that is in the Alfresco site

- The bounds are very important for OceanSITES so we know if it is a spot point or a measurement averaged over some time or depth.
- Molly – the PIES are really measuring a point measurement. **Action to try to work this out offline and try to figure this out.**
- Sediment Trap data – what do you report? The flux or the amt of matter you collect?
- They are set to open at different amts of time and it was over x days and when the start and finish. Closing time of one bottle is the same as the opening time of the next
- The PI will make his interpretation consistent and this needs to be recorded somewhere but it is up to the PI
- Fernando – floating trap data. Only 1 number in the data file. But is this part of OceanSITES? They do not drift very far. There are special cases that we will need to look at on an individual basis.
- Feature type – is designed for lagrangian and we have not yet used it in OceanSITES
- Ingo – how many sediment trap sites are there in oceansites? We need to define some special variables that we agree on in OceanSITES
- Thierry reviewed the action item from La Jolla and the standard names that exist. Action - **OceanSITES DMT will compile the list and approach CF to create the standard name**
- **Add notes from dyfamed site mantis action from 2011**
- What about SeaDataNet lists?
- For OceanSITES it might be good to set some bounds. Do we really want to collect all of this? What parameters to we really want in OceanSITES? **Action to discuss with Science Team** Any one of these areas could have 100 parameters
- It must be clear for all PIs that OceanSITES is not a repository for its data but only for selected datasets.
- Widely used parameters should certainly be included in OceanSITES but very special cases probably not. We need a discussion on how we want to common and essential variables in the format
- Discussion on allowing a different axis to handle spectrum data. Data is stored very efficiently (Thierry Argo example). We are not yet sorting spectral data in Oceansites but why not have it a 5th dimension
- Action – get some examples for sed trap data and work on them

- Makio Honda dataset
- Action – update format checker Ifremer

8. Download Statistics

- The DMT Reviewed the ftp statistics that Thierry presented a few months ago.
- As discussed we need to make these available, remove the bots, and have NDBC provide the same statistics
- ACTION – NDBC to provide the download statistics

9. Data Holdings

The GDAC files were reviewed and it was commented that we need to figure out a way to engage users to submit data. It was mentioned that the GDACs and some DACs can provide some assistance and example scripts are stored in Alfresco. Users should be utilizing these resources.

- What mechanisms can we use to improve data flow (from gentle reminders to threat of exclusion)
- Review of the data on the GDAC sites highlighting the fact that the TAO sites are skewing the stations and that many of the sites have not been updated in quite some time.
- 30-40% of the sites that are in the catalog have submitted data. Others have never submitted data to a GDAC
- Thierry, Ifremer GDAC, gave a summary of Ifremer GDAC operations.
 - Ifremer GDAC is synchronized 2x per day with NDBC
 - 2x per day data from former EuroSITES project are collected and distributed on GDAC
 - Statistics on May 29, 2013 – 8247 files from 86 sites (+600% and +56% since 2011). It should be noted that the BATS site has over 6000 files in this directory alone.
 - Number of parameters reported: 96 (+74% since 2011)
 - Oldest data file: Station-M (1948)
- The team went around the table to ask each member where data stands
 - India is pretty close to being able to submit data.
 - Pirata and Rama is included in an Ifremer DATA_AGGREGATED director
 - Station M – has submitted data but not for all parameters. Time and resources.
 - ALOHA and HOT renaming their platform, but data is there
 - Korea – will be getting data soon. Action – follow up on this. KI Chang
 - Tom – discussed the IMOS sites. They are committed to providing the OceanSITES format and are just short on resources.
 - Meghan reported that PAPA has made progress with deployment by deployment files
 - LION Site formatted to OceanSITES. Should be available soon.
- Goal is to have a large increase by next meeting
- User's that do not submit data will have an empty star or circle on the OceanSITES map
- Mike mentioned the relationship with NOAA and sharing of processing for M-2. M-2 name change M -2 ended and now the name is M46044
- There was a discussion of the site and platform names. We need to ensure that this is consistent in the catalog
- Actions

- Project office to better track and provide statistics on percentage of sites that are sending data to the GDACs. Of those, which sites have been updated in the past few months
- Project Office update catalog for station M
- Ensure the naming convention is clear in the user's manual for the difference between platform vs site names.

10. Use of Digital Object Identifiers (DOI)

The DMT has been discussing the use of DOIs for OceanSITES datasets. A DOI is a unique character identifier for digital data or publications. The feasibility of whether or not these can or should be used for OceanSITES data was discussed.

- DOI objects are supposed to be stable, OceanSITES files can be updated
- Needs an authorized agency that can produce and maintain DOIs and there is a cost
- Naming convention: existing OceanSITES site/platform names are unique and can be used
- Pangea is already issuing DOIs and they cannot be issued another DOI when submitted to OceanSITES.
- Pangea was demonstrated by Ingo. The group was impressed at the relationship between child and parent datasets. View www.pangea.de for more information
Suggestion to PIs to obtain a DOI for the data that is used in a publication. E.g a group of Oceanistes , floats and drifters are used for a publication and they should take that data and obtain a DOI for it. Then the data is preserved. This needs more consideration
- Would allocating DOIs make the use of the datasets easier to track?
- Questions that need to be answered:
 - 1 DOI per file? Or 1 DOI per OceanSITE site?
 - What happens when the dataset changes due to a problem of conversion or something. At Pangea they delete the dataset and keep the DOI but it also directs to the new DOI
 - Consideration of manual labor with URLs. The DOI contains the file name for the URL so if the site changes, we have to consider this.
- Coriolis is doing this for Argo and if Argo is doing this, we should consider this. Thierry presented what Argo is doing – looking for a way to easily identify Argo data in publications
- You can append data without a new DOI. But if data is reprocessed there must be a new DOI
- What if we just used 1DOI for all OceanSITES data? There is already an OceanSITES publication that exists from OceanObs09:
<http://www.oceanobs09.net/proceedings/cwp/cwp79/>
- IMOS – has a citation in the global attribute section. Having it in the file is a good idea then in Web of science you should be able to search papers for OceanSITES.
- A publication uses the OceanSITES DOI. We encourage you to acknowledge data if you need traceability for the OceanSITES data then you apply for the DOI.
OceanSITES can make this suggestion

DMT should consider this for Data Manual 1.4

2 ideas and details still need to be finalized

- 1) Track it to the originator
- 2) Statistics for OceanSITES

11. Historic Weather Ship Data

- Question from Meghan on Station M – where does the met data exist? This is an issue that Meghan is struggling with . finding the met data from Station Papa. Can the OceanSITES community act as an advocate for preserving these data weather and oceanographic. Seems we are really on the verge for losing this data. If we don't know where it is, who does?
- Where is the home for ocean weather ship data. Is there an international archive for such data. If not, the operators of these former ocean-weather ship can take a lead for where this data is and perhaps include this in our OceanSITES archive?
- Thierry contacted Pierre Blouch on where these data are. Pierre said it was the Marine Climate Data System (MCDS) of JCOMM and OceanSITES needs to keep in contact with this group
- The contacts were made at the SOT meeting and we might want to match the OceanSITES sites
- Steve Diggs showed a presentation where they had shifted their focus to HOT, BATS, and also other data. They will pursuing these other shipbased observations of relevance to OceanSITES. (PAPA, CalCOFI, etc)
- Meghan to Steve – when you start to look at PAPA subsurface data, she thinks you will be happy with the organization. However, the met data is really a mess and do you have any experience with working with the met data and are you truly serious in that you would be interested in looking at this.
- Contact MCDS if they have data for HOT and BATS.
- In the US a group has tried to archive some of this weather ship data. OceanSITES should at least know where this data is.

Action – follow up with MCDS on next meeting.

- Feasibility to include in OceanSITES?
- A short white paper on this to find out where we are and we will contact MCDS (more notes from audio)
- Get together a weather ship list of what is interest to OceanSITES.

12. Next meeting:

Regarding face-to-face meetings, there will likely be a one held in 2014 with the same format alongside a SC meeting. Location unknown at this time.

13. APPENDIX I: Attendees

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14. APPENDIX II: Action Items

No.	Ref item	Action item	Who	Deadline
1	2	Draft and finalize a "quick start" document for working with OceanSITES data. Perhaps with screen shots	TT-DM	Dec-13
2	2	Finalize changes to the website as proposed by the DMT prior to the meeting	PO	Nov-13
3	3	Close out action items marked as complete in Mantis	Thierry	asap
4	3	SC and OceanSITES exec to move forward with the selection of a DMT chair and define the roll of the chair.	EC	asap
5	3	Add instructions into manual on the approval process of documents, decisions within OceanSITES?	DMT Chairs	Nov-13
6	4	Finalize the process for archiving OceanSITES data with NODC	PO and NODC	Nov-13
7	5	Continue discussion on OceanSITES hosting of gridded data and formats accepted by OceanSITES	DMT	Feb-14
8	5	continue to provide highest resolution data and look into provenance to track to aggregated datasets.	DMT	Feb-14
	6	Create a new 1 page document for data users (those that are downloading OceanSITES data)	DMT Chairs	Jul-13
10	6	Update OceanSITES manual to include discrete geometry	DMT Chairs	Jul-13
11	6	Provide guidance on what we want users to use for salinity. A new field in the attribute table that we want users to use 1 for salinity and uunits for the others.	?	
12	6	Review and approve all documents, DMT and Executive Committee Members	DMT	Dec-13
13	6	Create a draft OceanSITES ToR	TT-CB	Dec-13
14	7	AOML PIES are really measuring a point measurement	Molly B	Aug-13
15	7	OceanSITES DMT will compile the list and approach CF to create the standard name	DMT	Nov-13
16	7	Work with science team on full list of parameters we want to collect in OceanSITES	DMT,SC	Feb-14
17	7	Obtain some examples for sed trap data and work on them	Thierry, Matthias?	Nov-13
18	7	Update format checker at Ifremer	Thierry	Dec-13

19	8	NDBC to provide download statistics	Jing	Nov-13
20	9	Follow up with KI Chang on Korea data	Project Office	Dec-13
21	9	Project office to better track and provide statistics on percentage of sites that are sending data to the GDACs. Of those, which sites have been updated in the past few months	Project Office	asap
22	9	Project Office update catalog for station M	Project Office	asap
23	9	Ensure the naming convention is clear in the user's manual for the difference between platform vs site names.	Project Office, DM Chairs	asap
24	11	Connect with MCDS and find out when their next meeting is	Project Office	asap

