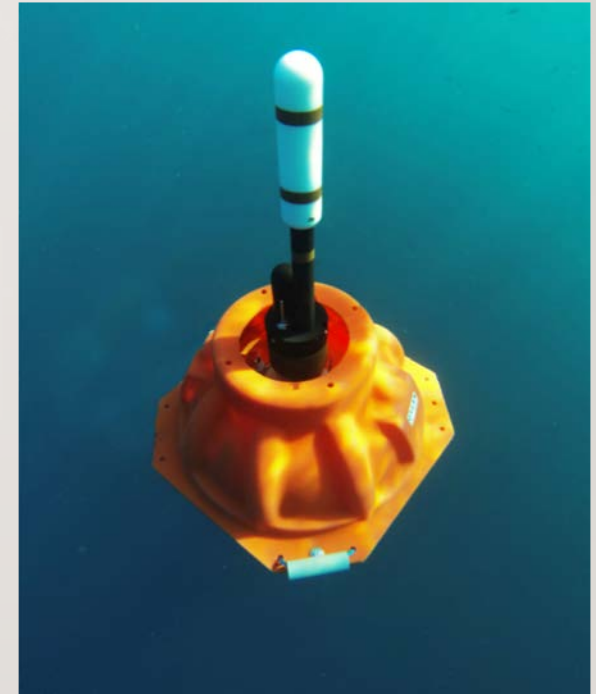
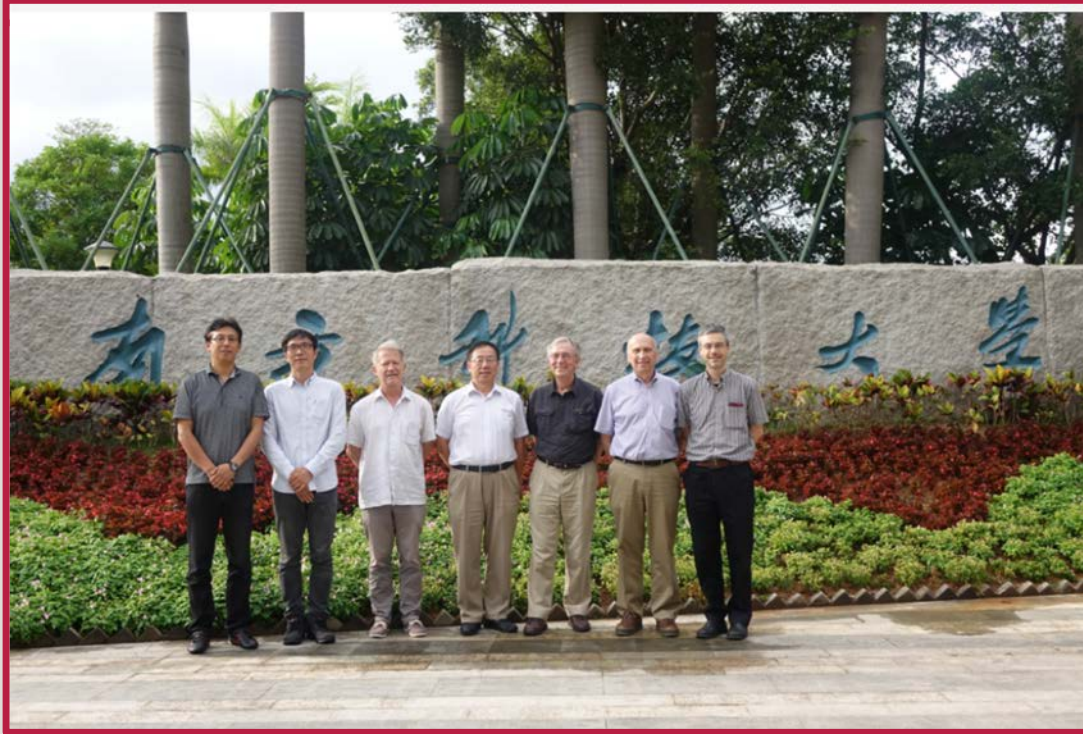


PROPOSED GEOCSV FILE STRUCTURE TO CAPTURE MOVING STATIONS

THE EARTHCUBE-OCEANS STEERING COMMITTEE

EARTHSCOPE-OCEANS STEERING COMMITTEE



**First Steering Committee Meeting at SusTech University in Shenzhen, China
representatives from Japan, Korea, France, China, USA**

THE PROBLEM

- Some stations with sensor data submitted to the FDSN centers change location and/or orientation
- Groups may not currently have infrastructure teams to develop more complicated solutions
- Often estimates of location/orientation are not measured directly but estimated using algorithmic methods
- The goal is to offer a simple to use method to capture location and orientation information for later use

EXAMPLES

- **MERMAIDS FLOAT WITH THE CURRENT**
 - Spend most of their time underwater so no direct GPS measurements
 - Estimates of position are derived using one or more algorithms
 - They wish to capture enough data so that positions could be recalculated by others with different algorithmic methods
- **NO TOOLS EXIST TO CAPTURE THIS DATA**
 - The exact values to capture may change with time
 - Format must allow flexibility without complex standards begin vetted

SEISMOLOGY EXAMPLES

- STATIONS ON ICE FLOWS OR GLACIERS
 - Measurements of locations/orientations may be only periodic
 - Locations may have to be interpolated
- NO TOOLS EXIST TO CAPTURE THIS DATA
 - The exact values to capture may change with time
 - Format should be flexible and easy to adapt to new needs without modifying standards such as StatonXML

CAPTURING MOVING STATIONS USING A GEOCSV FILE

#dataset: GeoCSV 2.0																			
#delimiter: ,																			
#field_unit	ISO_8601	unitless	unitless	unitless	unitless	degrees_north	degrees_east	meters	meters	degrees	degrees	unitless	factor	hertz	unitless	hertz	parm1Units	parm2Units	
#field_type	datetime	string	string	string	string	float	float	float	float	float	float	string	float	float	string	float	float	float	
MethodIdentifier	StartTime	Network	Stations	Location	Channel	Latitude	Longitude	Elevation	Depth	Azimuth	Dip	SensorDescription	Scale	ScaleFreq	ScaleUnits	SampeRate	parm1	parm2	
Measurement:GPS:Trimble	2018-07-09T19:45:00Z	MH	STA1	0	EDH	34.945911	106.457199	0	0			MermaidHydrophone	1984739970	0.02	N/M**2	200			
Algorithm:Bonnieux:DOI	2018-07-09T20:45:00Z	MH	STA1	0	EDH	35.945911	107.457199	0	1500			MermaidHydrophone	1984739970	0.02	N/M**2	200	17.3	27.2	
Measurement:GPS:Trimble	2018-07-09T21:45:00Z	MH	STA1	0	EDH	36.945911	108.457199	0	0			MermaidHydrophone	1984739970	0.02	N/M**2	200			

RECOMMENDED CHANNEL NAME

- GeoCSV files would be inserted into miniseed with a channel identifier of ALO
 - Aministrative
 - Location and Orientation
- Tools could be developed to extract core information from GeoCSV files to populate core fields in StationXML
 - Perhaps only core values such as lat/lon/elevation/depth need be extracted for StationXML
 - StationXML would need a parameter indicting that positional information can be found in an APO channel

EARTHCUBE OCEANS (MERMAIDS)

- Data are being collected now and some of these data will be open
- This simple system would expedite making these data available

EXTERNAL INPUT THAT HAS BEEN RECEIVED

- PASSCAL Instrument Center
 - Captures all of the necessary fields
- EarthScope Oceans
 - The proposed GeoCSV structure captures all of the required data they want captured
 - The proposed format would be easy for them to accommodate
- What other organizations should we contact?