From: **Denis Klimov** klimov@mbari.org
Subject: Re: GeoSense DAS Cable Review - Supplemental Information
Date: April 30, 2024 at 8:24 PM
To: Aaron Schnittger aschnittger@mbari.org
Cc: Aaron Micallef amicallef@mbari.org, Richard Henthorn henthorn@mbari.org, Knute Brekke knute@mbari.org, Jon Erickson jon@mbari.org, Andrew Hamilton hamilton@mbari.org, Francois Cazenave francois@mbari.org, Paul McGill mcgill@mbari.org, Brett Hobson hobson@mbari.org, Alana Sherman alana@mbari.org

Hello All,
thank you for participating, and please find my notes below. Not meant to be comprehensive, my typing is a bit slow. If you see any issues with notes, please let me know.

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2024-04-30, 10:00-11:15
GeoSense DAS Cable Design Review
Presenting: Aaron Schnittger
Participating: Aaron Schnittger Francois Casenave, Alana Sherman, Aaron Mecallef; Paul McGill, Knute Brekke, Andy Hamilton; Brett Hobson; Rich Herthorn; Denis Klimov

Alana: Extensive previous discussions on deployment scheme, making the cable critical component.
Andy: what is on the side of the of the cable?
Aaron S: acoustic release, weight.
Denis: there is an optic “black hole termination” too.
Aaron S: modeling / load calculation, static and dynamic, 200m electronics package depth. Requested 8 quotes.
Alana: a concern, aside of density of the cable, is to make sure it is laying flat.
Denis: two planes, vertical (coupling to sea floor) and horizontal (antenna geometry)
Aaron S: Concept Cables, the only with multi-stranded wires.
Brett: have contact for high quality cable termination.
Knute: all cables are jacketed, why? Transatlantic cables are unjacketed.
Francois: tried unjacketed cable on sea floor, had a lot of corrosion, it was even galvanized.
Denis: unjacketed cable could have better coupling to sea floor.
Knute: any color for the jacket, just not black.
Andy: is there a strain of the k-tube at the working load?
Aaron: cable selection, rating system. What should be the value of safety factor for this case?
Andy: typically 5:1 on static load during lifting. Power Buoy 3:1.
Knute: 5:1 on mooring.
Andy: big unknown is peak load, especially if dragging the load.
Paul: would winch indicates actual load?
Andy: plastic triangles in the front, not to digest the mud.

Aaron S: Requirement 20kN working load, 44kN breaking strength
Denis: a breaking strengths in quotes: rounded numbers: 60kN, 50kN etc. What numbers not rounded, is typically result of units conversion.
Knute: they do not know this well themselves, +/-10%
Aaron S: Concept Cable strongest, but not very well known.
Alana: how do we decide between stronger cable and known quality?
Knute: not just look at the numbers, consider adding strength to the cable from a known supplier you confident you can work with.
Andy: export/ export fees?
Brett: winch diameter?
Alana: 12", need to build it up before adding cable.
Francois: do not use UHMW, too slippery. Wood is better.
Knute: under load, will un-speen
Andy: story of the cable deployment, cable twisted at depth under the water pressure due to Kevlar compression.
Knute: stranded wire, why do they use it?
Paul: stranded cable might be stronger per unit of cable weight, since individual wires might be able to stretch, equalizing load distribution.
Denis: would unspooling at depth, under load of the electronics package, created twist problem since on the bottom, as deployed, would be no load?
Andy: ideally, need to untwist the cable at the same load and pressure, as would be deployed.
Knute: the stranded cable looks unusual and interesting, but would this create termination issues?
Brett: TMT would be able to say if multi stranded cable is ok to terminate. They do high quality work.
Paul: identify top 3, work with them.
Andy: testing for the load rating, could test torque effect too, accurate torque meter, legit friction-free bearing
Alana: thank you everybody.

Post discussion: by GeoSense team:
Denis: how much risk, if cable deployed in spiral creates a serious issue?
Paul: this would likely increase noise floor.
Aaron M: agree.
Denis: what about the stranded cable then, it has a chance of be more flexible, just like multi-stranded wires in electronics are more flexible.
Alana: follow up with several vendors, ask to re-specify the working and breaking load rating, question of K-tube strain and others
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Cheers

Cheers,

Denis Klimov

From: "Aaron Schnittger" <aschnittger@mbari.org>
To: "Aaron Micallef" <amicallef@mbari.org>, "Richard Henthorn" <henthorn@mbari.org>, "Knute Brekke" <knute@mbari.org>, "Jon Erickson" <jon@mbari.org>, "Andrew Hamilton" <hamilton@mbari.org>, "Francois Cazenave" <francois@mbari.org>, "Paul McGill" <mcgill@mbari.org>, "Denis Klimov" <klimov@mbari.org>, "Brett Hobson" <hobson@mbari.org>
Cc: "Alana Sherman" <alana@mbari.org>
Sent: Monday, April 29, 2024 5:30:03 PM
Subject: Re: GeoSense DAS Cable Review - Supplemental Information

Sorry everyone... These links are not working. At least not on my machine.

Please follow the atlas path.

Aaron Schnittger
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From: "Aaron Schnittger" <aschnittger@mbari.org>
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Cc: "Alana Sherman" <alana@mbari.org>
Sent: Monday, April 29, 2024 5:25:07 PM
Subject: GeoSense DAS Cable Review - Supplemental Information

Hello All,

Thank you all for attending the GeoSense DAS cable review on Tuesday, April 30th.

For supplemental information of the cables under consideration, please see the following link:
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I'll bring a few printed copies to the meeting. However, if you have access to digital means of reviewing the documents, please do so to save some paper.

See you all tomorrow!

Regards,

Aaron Schnittger
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