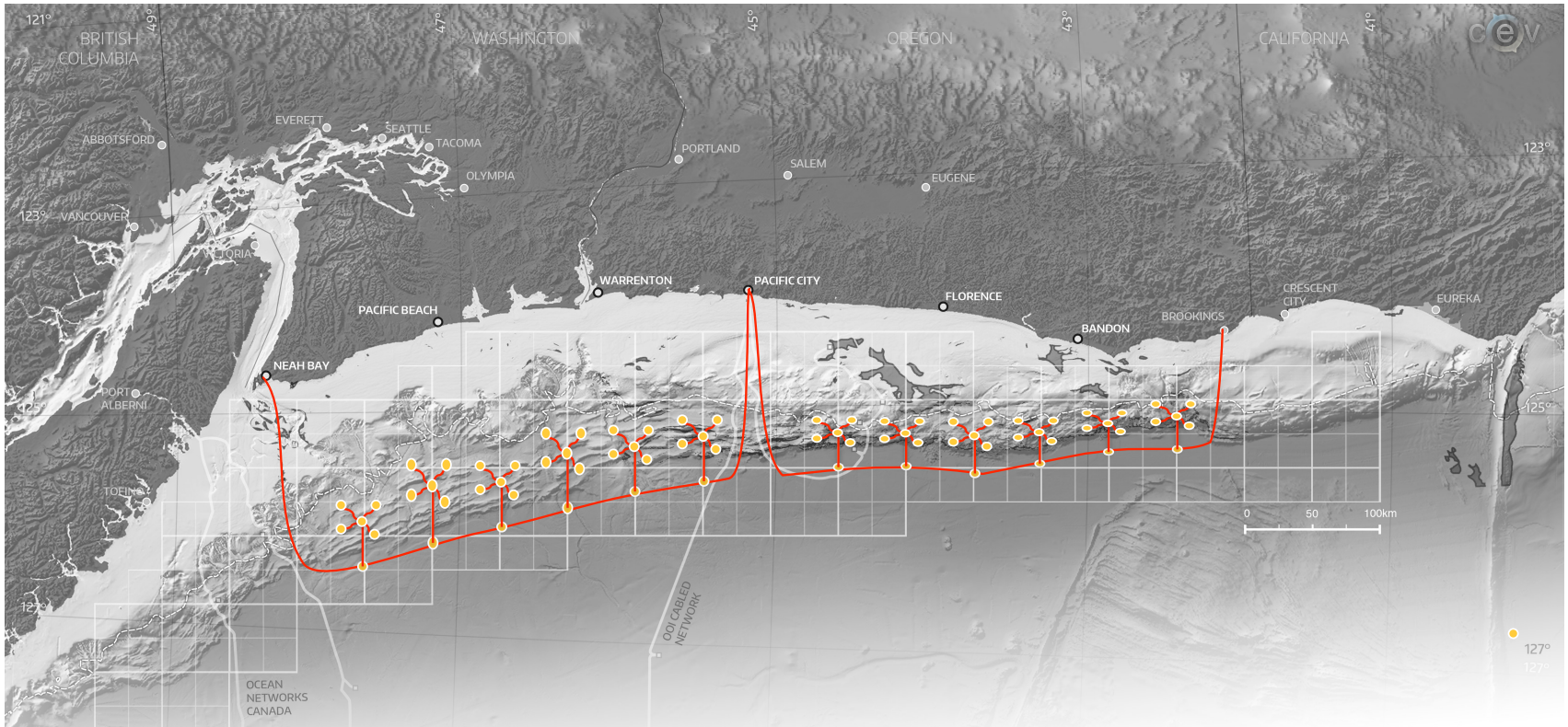
Appendix D

Submitted Network Design Maps (Breakout 3)

Full resolution versions of the network design maps are included in the online version of the workshop report

Draft



"Fishbone Network"
Avoid the shallow shelf (riskier and more noisy).
Emphasize observations near the trench.
Minimize cable length.
It is easier to lay the cable in deep water.
Need redundant shore stations.

Design by:
Eiichiro Araki
Katsuyoshi Kawaguchi
Heidi Houston

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cascadia.washington.edu

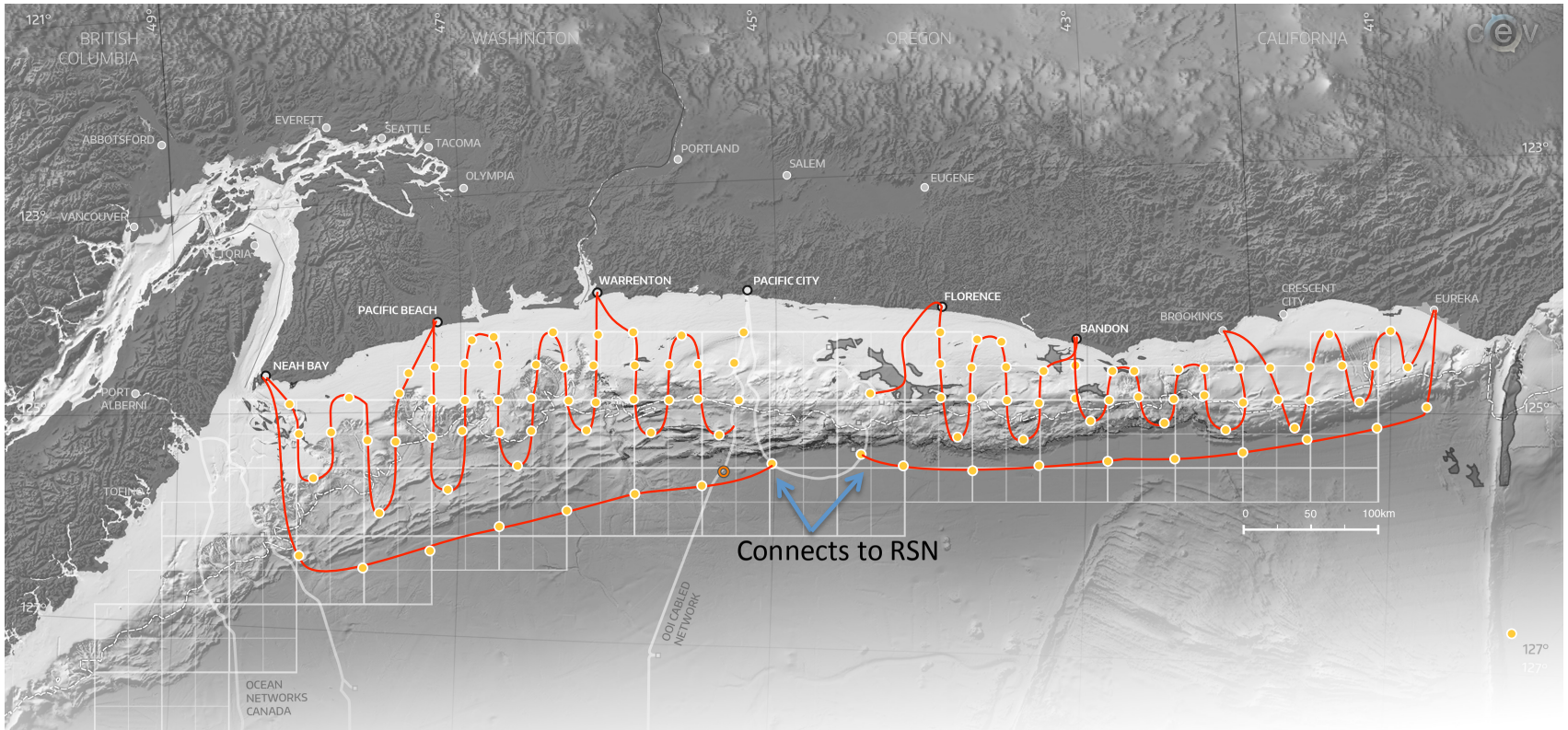
Seismic+Pressure (+fiber strain on inner loops)

700 Fathom Contour Line - All portions of the cables from the shore to a distance of at least 1km seaward of the 700-fathom line must be buried.

National HAPC Rocky Reefs - Rock Reefs and Rocky Outcrop areas where 100% of cable burial may not be possible.

Existing Cables & Shore Stations – NOAA charted Submarine Cables, 2015.

50 and 25 Kilometer Grid - To aid in spacing out network configurations.



25-50 km spacing on inner loops
50 km spacing on incoming plate

Design by:
Jackie Caplan-Auerbach
Ronnie Grapenthin
Mathias Franke
Katherine Kornei

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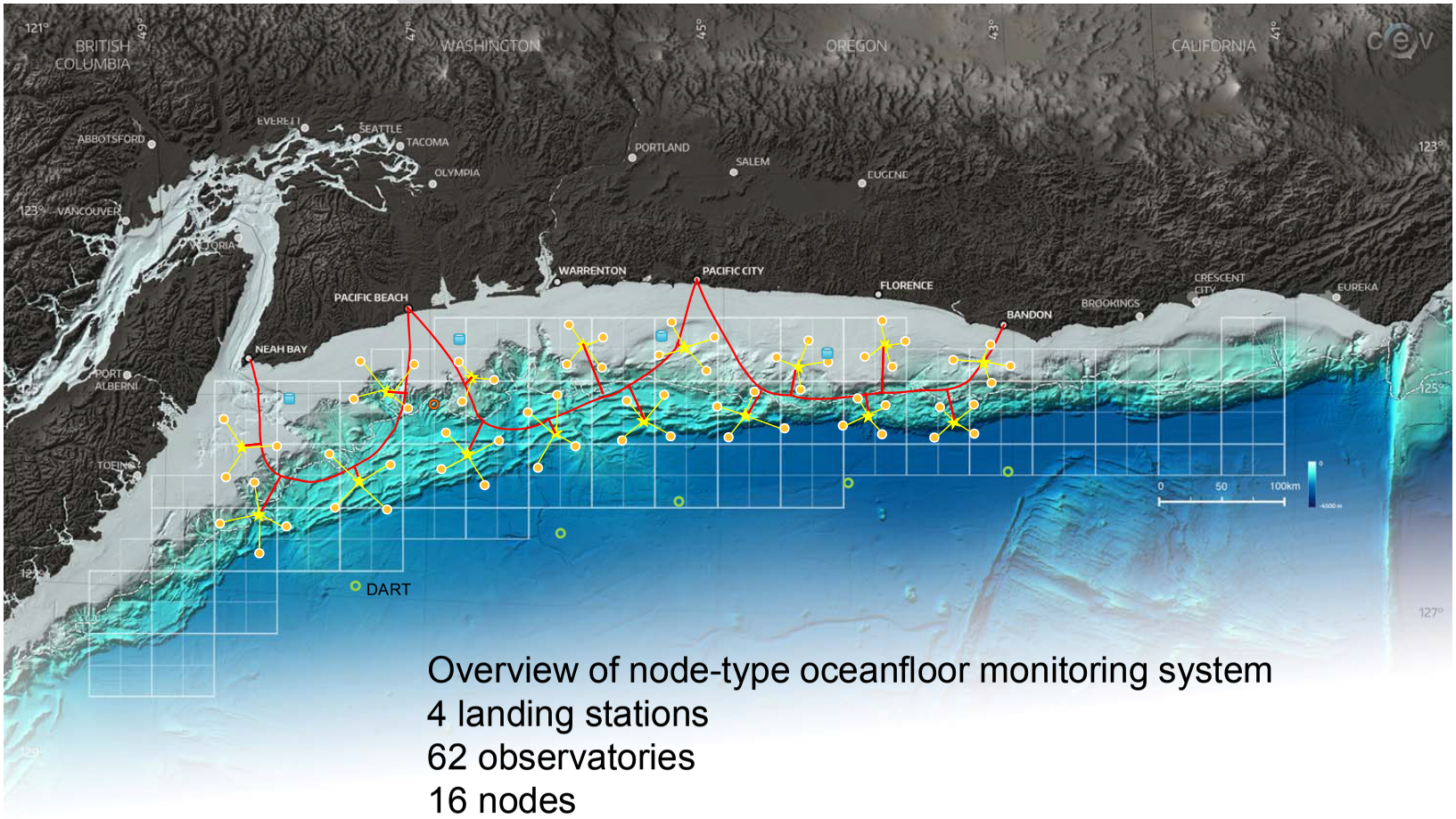

Overview of node-type oceanfloor monitoring system
4 landing stations
62 observatories
16 nodes

Issues: How to cross some seafloor canyons safety?

Design by Narumi Takahashi

- Seismic+Pressure – Hardwired
- Seismic+Pressure – Hardwired + 10W Wireless Connection
- Branching Unit
- 500 Watts Junction Box – With ROV Wet Mates
- GPS Buoy

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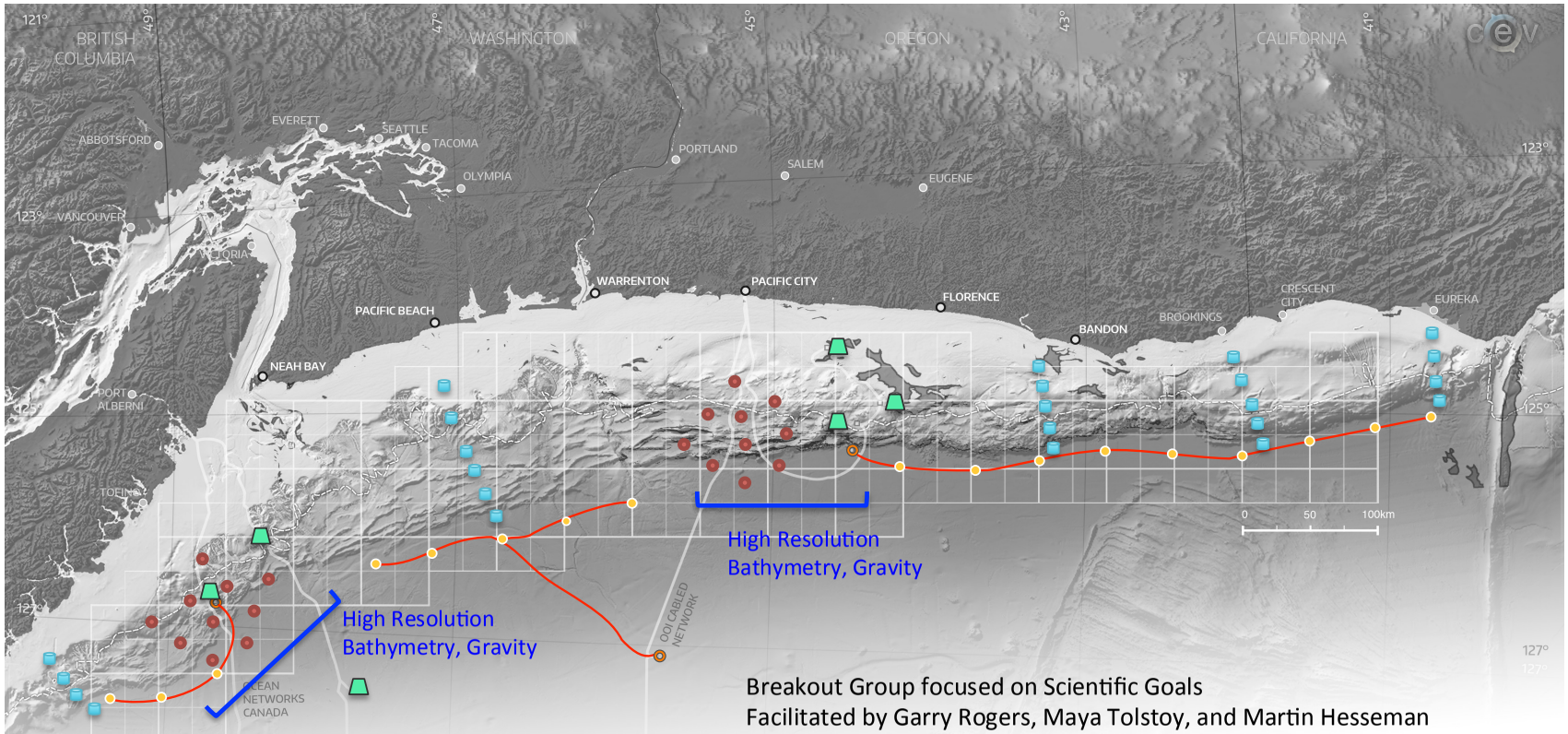

Breakout Group focused on Scientific Goals
Facilitated by Garry Rogers, Maya Tolstoy, and Martin Hesseman

<u>Considerations for Science Goals:</u> (1) Focus instruments on lower slope and trench, particularly arranged in transects. (2) Focus initial efforts around existing cables, then branch out. (3) The Gorda and Explorer plates are active areas worth studying, and provide a good comparison to the quiet, central areas of the margin. (4) Cable should provide ample opportunities for connecting and experimenting with varied instrumentation.

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- Broad Band Seismic + Pressure – Cabled
- OBS Array
- Fiber Optic Strainmeter, CORK, Tiltmeter, CPIES
- 500 Watts Junction Box – With ROV Wet Mates
- GPS-A site

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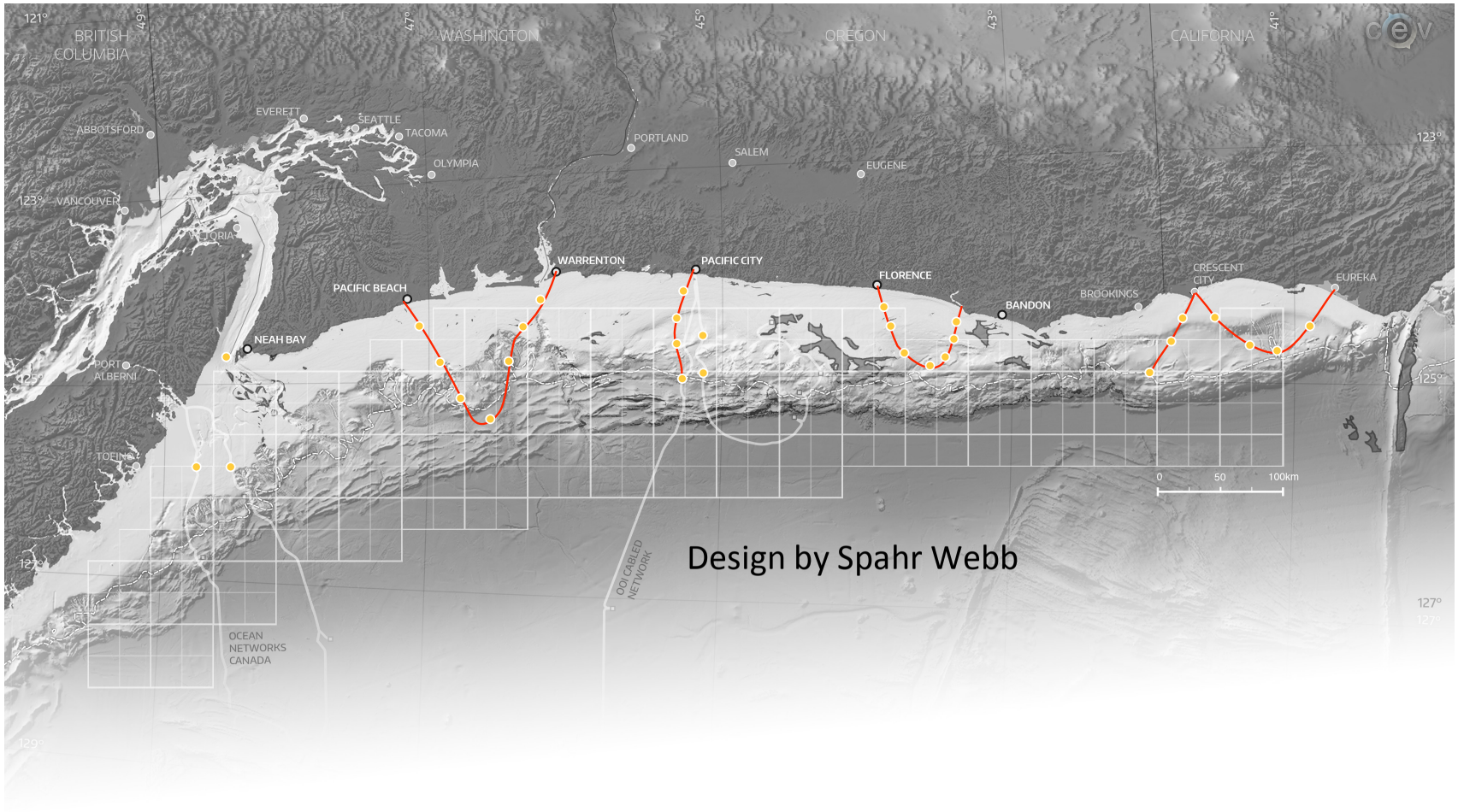

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Instrument Package

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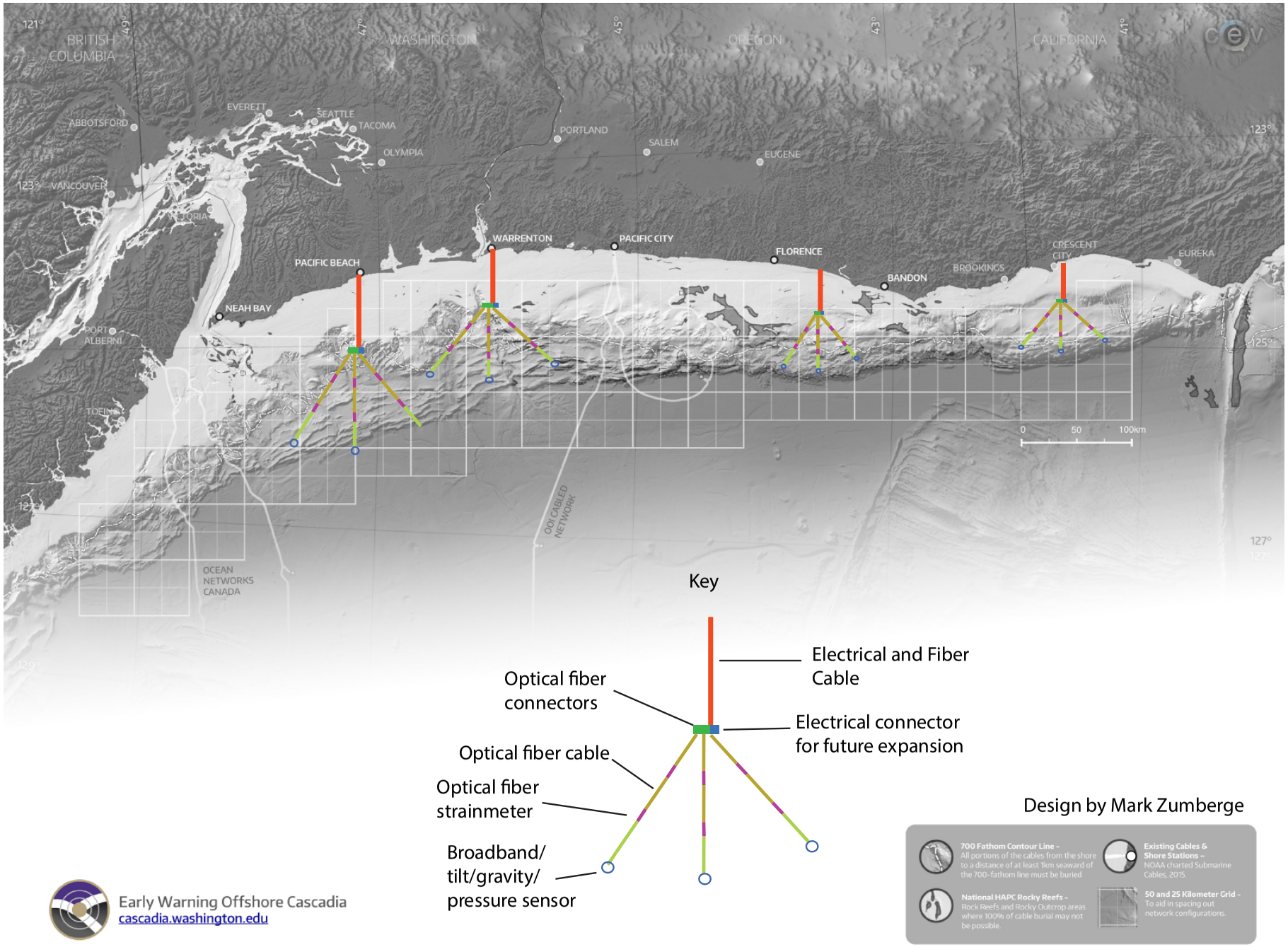
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BANDON
BROOKINGS
CRESCENT CITY
EUREKA
OCEAN NETWORKS CANADA
OOI CABLED NETWORK
0
50
100km
Key
Electrical and Fiber Cable
Optical fiber connectors
Electrical connector for future expansion
Optical fiber cable
Optical fiber strainmeter
Broadband/ tilt/gravity/ pressure sensor
Design by Mark Zumberge
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