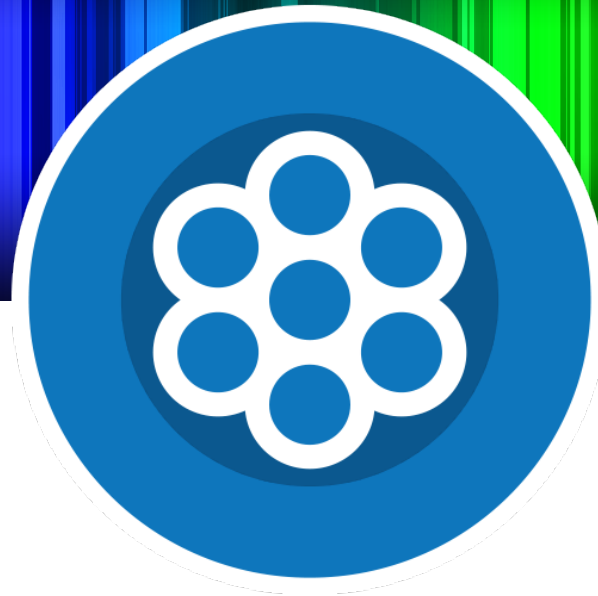# choice

Cost-effective, High-performance Oceania Island Communication Evolution.

Founded by some of the industry's most **experienced and trusted** telecommunications entrepreneurs, SubPartners has the **relationships**, **experience** and access to **funding** necessary to take major telecommunications infrastructure projects from concept to reality.

The SubPartners Team

Our experienced team have led the construction of approximately $400m worth of submarine cable projects.

This represents all major submarine cable projects connecting Australia to the world over the last decade. We have also built Australia's third largest metropolitan fibre network and the largest deployment of data centres across Australia. Together these projects represent almost a billion dollars of delivered infrastructure.

The SubPartners Team

Bevan Slattery
CEO & Co-Founder

Mr Slattery is a well known and respected figure within the Australian Information Technology and Telecommunications (IT&T) industry. He has a proven track record in building successful IT&T infrastructure companies and delivering critical infrastructure projects.

Ted Pretty
Co-Founder

Mr Pretty is well known for his vision, leadership and reputation as one of the most successful Information Technology & Telecommunications (IT&T) executives in Australia.

Carlos Trujillo
Commercial Director

Mr Trujillo's experience includes the delivery of significant submarine infrastructure projects including the Telstra Endeavour Project, where he drove the project from business case development to commercial and operational execution.

Doing Business in the Pacific since 2000

APX East Cable System

Delivering a new paradigm in independent submarine cable development.

APX-East will deliver the **lowest latency** & **only direct** connection between Australia & mainland USA, as well as connecting New Zealand and a number of Pacific Islands en-route.

APX-East
Direct Single Span

All Australia to mainland USA capacity routes all operate over multiple submarine spans.

By implementing a direct, single span capacity route between Australia and mainland USA we eliminate the need to regenerate the transmission path on a Pacific Island. This significantly reduces wavelength activation costs & lead times whilst also improving overall service performance and reliability.

APX-East will be the lowest latency connection between Australia and mainland USA. The estimated round trip delay between the two terminal PoP locations will be about 130 milliseconds.

APX-East
OSNR Levels exceptional

The use of high grade fibre and leading edge technology enables APX-East to be deployed as a single span with superior system optical signal to noise ratio (OSNR).

Where total capacity throughput is of vital importance, exceptional OSNR levels enable the use of the latest spectrally efficient coherent modulation schemes.

Exceptional OSNR levels permit the ability to deploy feature-rich terrestrial transmission systems as an alternative to specialised bespoke submarine technology. This provides a lower cost per bit delivery mechanism directly to your network.

APX-East Technical Specification

System Characteristic	
System Length	~12,500km
Number of Fibre Pairs	6
Fibre Configuration	D+
Trunk Repeater Count	210
Repeater Noise Figure	4.6dB
Repeater Spectral Width	36nm
Expected Fibre Pair Channel Count	64 with DP-QPSK
Expected Total System Capacity	38Tbs with DP-QPSK
Expected Ideal OSNR	19dB/1nm
Power Configuration	15kV Dual End Protected

Pacific Island Network

In strategic partnership with the Pacific Islands, APX-East will be configured with options for branch connectivity.

SubPartners will activate the connected Islands with 100Gbs of trunk capacity directly to Sydney and 100Gbs to the mainland USA via Hawaii.

If required, branch connections to the nominated Pacific Islands can be made post trunk system deployment.
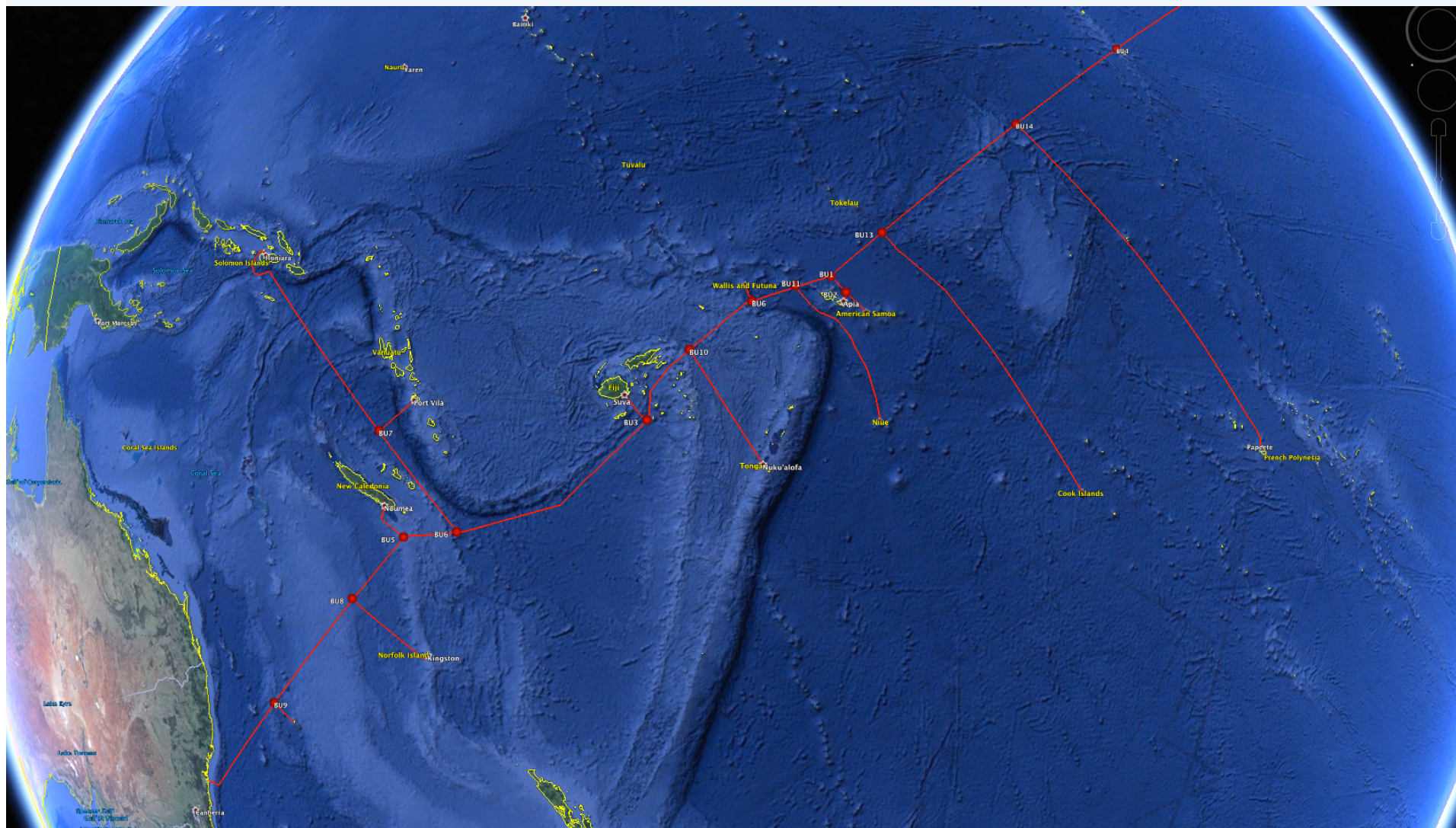
Significant construction cost savings will be made if the branches are installed at the same time as the APX-East main lay activity.

Islands may include:
- Samoa, American Samoa
- Vanuati, Solomons
- Fiji, Tonga, Nuie
- New Caledonia
- French Polynesia
- Norfolk Island, Kiribati

KMZ File – 14 BU's ☺

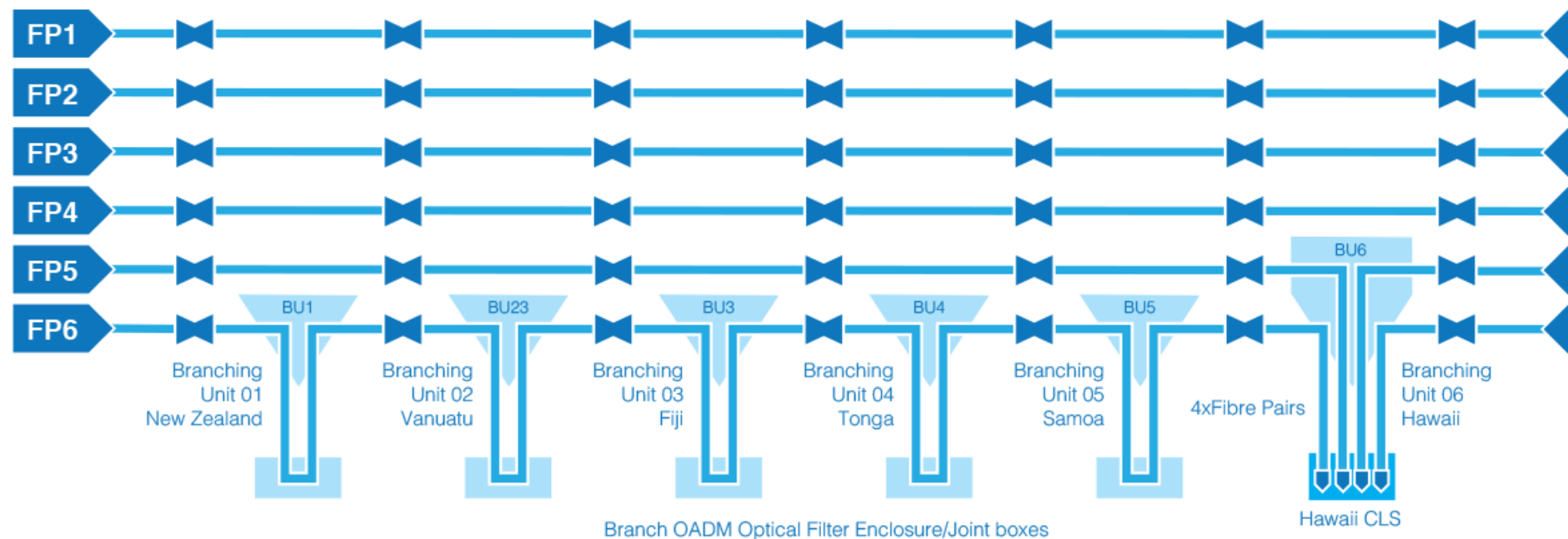# System Trunk Configuration

Sydney Australia — Mainland USA

FP1, FP2, FP3, FP4, FP5, FP6

BU1 — Branching Unit 01 New Zealand
BU23 — Branching Unit 02 Vanuatu
BU3 — Branching Unit 03 Fiji
BU4 — Branching Unit 04 Tonga
BU5 — Branching Unit 05 Samoa
BU6 — Branching Unit 06 Hawaii

4xFibre Pairs

Hawaii CLS

Branch OADM Optical Filter Enclosure/Joint boxes

4 x Fibre Pairs (FP1-4)   Australia to Mainland USA
1 x Fibre Pair (FP5)   Australia to Hawaii and Hawaii to Mainland USA
1 x OADM Fibre Pair (FP6)   Australia to Hawaii to Mainland USA

OADM connections supported on FP6
Sydney – New Zealand / New Zealand - USA
Vanuatu – Australia / Vanuatu – USA
Fiji – Australia / Fiji – USA
Tonga – Australia / Tonga – USA
Samoa – Australia / Samoa – USA

# Fibre Pair 6 Branch Options
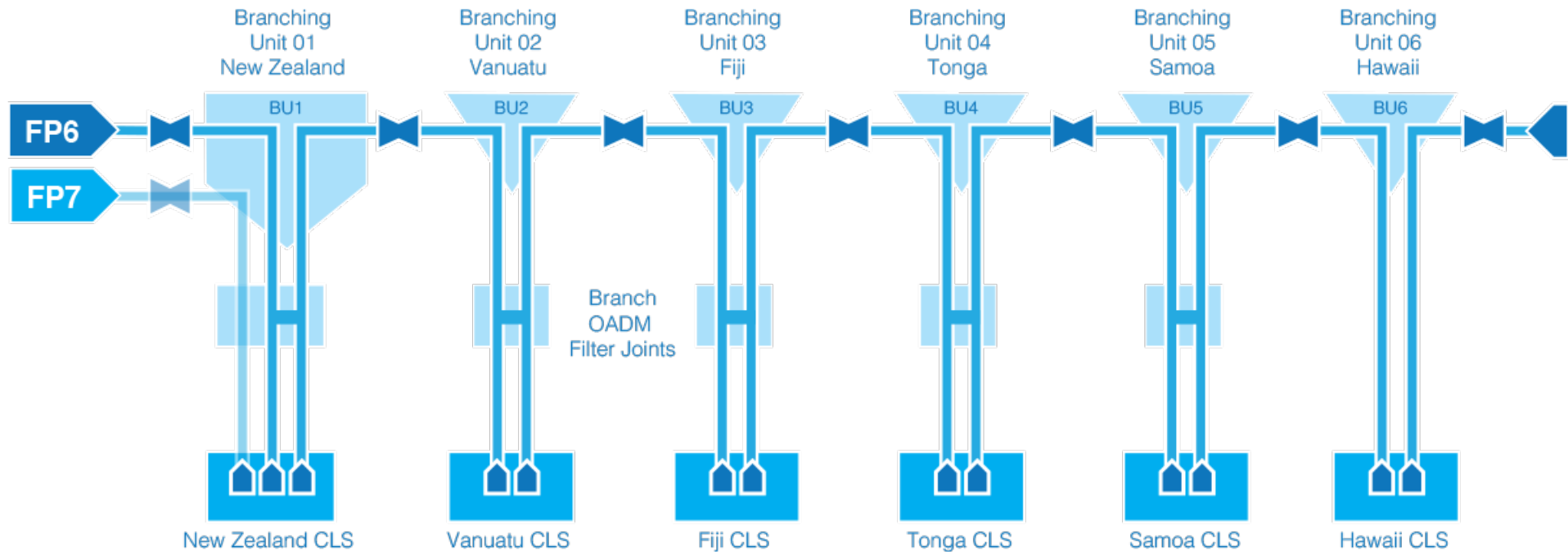
Island Branch OADM filters are set to pass a 1x100Gbs wavelength in each direction towards the terminals.
Total drop capacity to each connected Pacific Island is 200Gbs.
New Zealand OADM filters are set to pass a Nx100Gbs in each direction towards the terminals.
Further option for New Zealand branch to deploy additional full fibre pair(s) to Sydney (FP7).

Trunk Terminal Locations

Sydney: NEXTDC S1
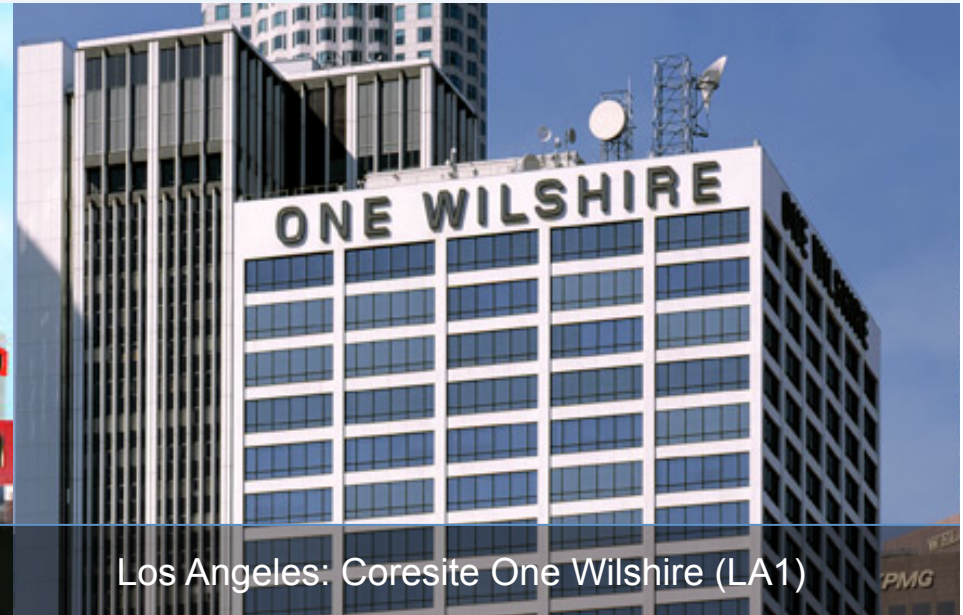
Los Angeles: Coresite One Wilshire (LA1)

APX-East will be a direct connection between two highly tenanted Sydney and Los Angeles data centre locations.

No requirement for additional costly domestic backhaul capacity for carrier interconnection at either end of the system.

Oceania Research Network

APX-East will be a platform for Pacific Island research and academic growth.

Dedicated bandwidth between the trunk terminal locations and the Pacific Islands will be allocated to ensure availability of low cost international connectivity for educational establishments and research organisations.

Research organisations and Government authorities of the connected Pacific Island groups will also be able to participate in data collection and analysis from the APX-East Oceania Sensor Network.
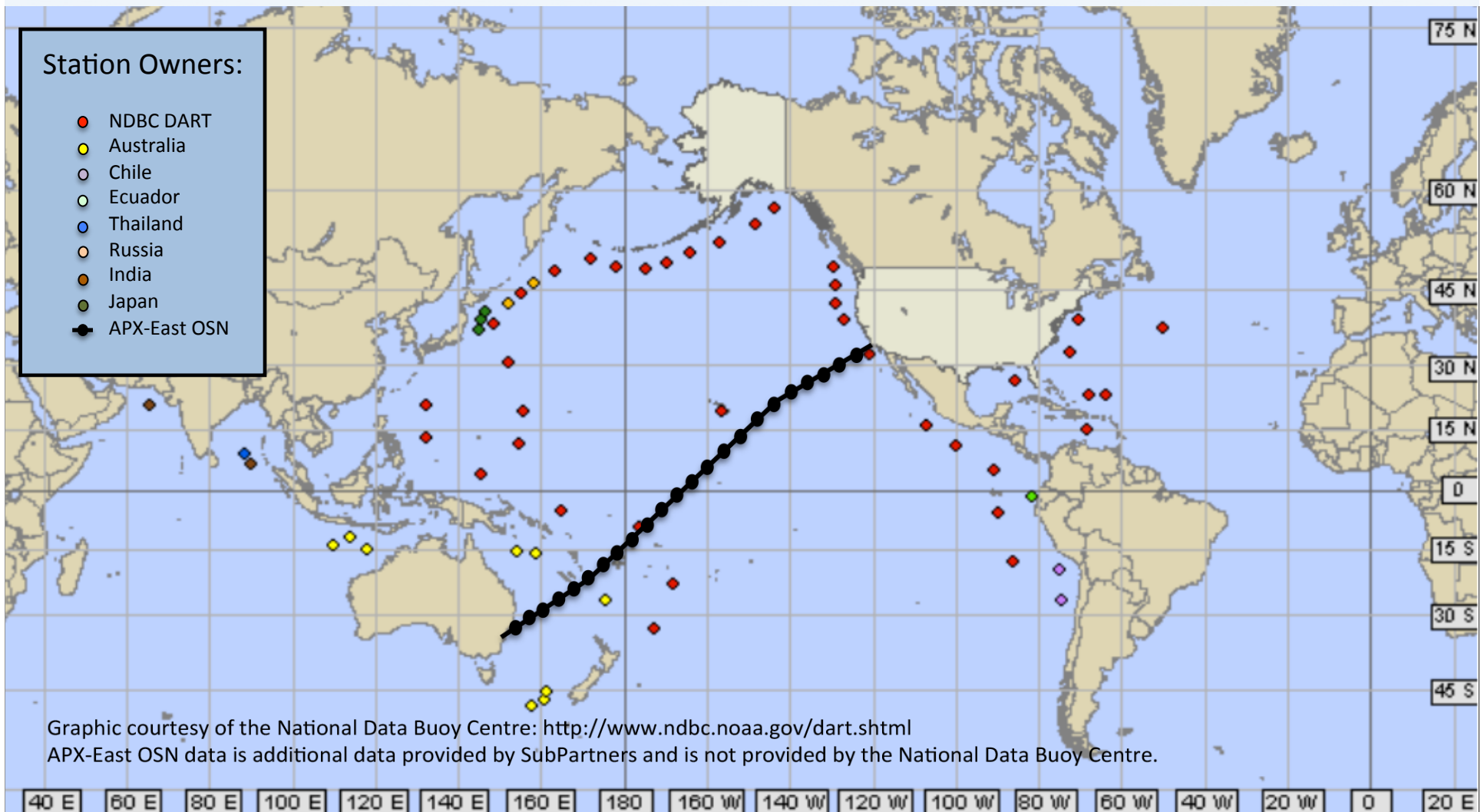
Oceania Sensor Network

APX-East could become the world's largest subsea sensor array providing real-time, high resolution data from the pacific sea floor.

The APX-East repeaters can be equipped with externally tethered marine surveillance technology to monitor the environment & detect oceanic events.

Enabling the monitoring of seabed water pressure, temperature & seismic activity, disaster response teams and academic research groups have an unprecedented surveillance and early warning opportunity.
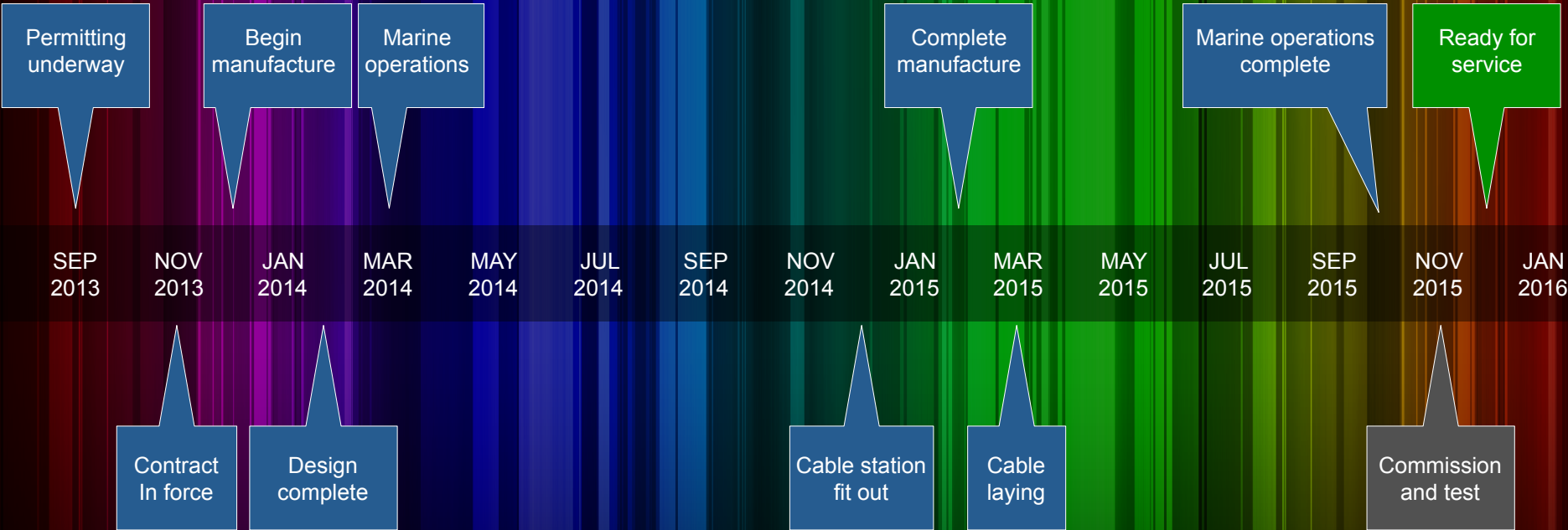
Complimentary augmentation of the existing methods for deep ocean assessment and reporting would provide a new feature-rich, real-time, high resolution, low maintenance, weather & battery life independent platform for detecting unpredictable natural threats and events.

Oceania Sensor Network

Station Owners:
- NDBC DART
- Australia
- Chile
- Ecuador
- Thailand
- Russia
- India
- Japan
- APX-East OSN

Graphic courtesy of the National Data Buoy Centre: http://www.ndbc.noaa.gov/dart.shtml
APX-East OSN data is additional data provided by SubPartners and is not provided by the National Data Buoy Centre.

Deployment Timeline

Our Blog

We publish our progress on our blog, providing a rare insight into the construction of our submarine cable systems.

Our blog includes technical details of the system, design information, photo's, video, commentary and the ability for users to ask questions and post comments.

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