



The Connected Pacific

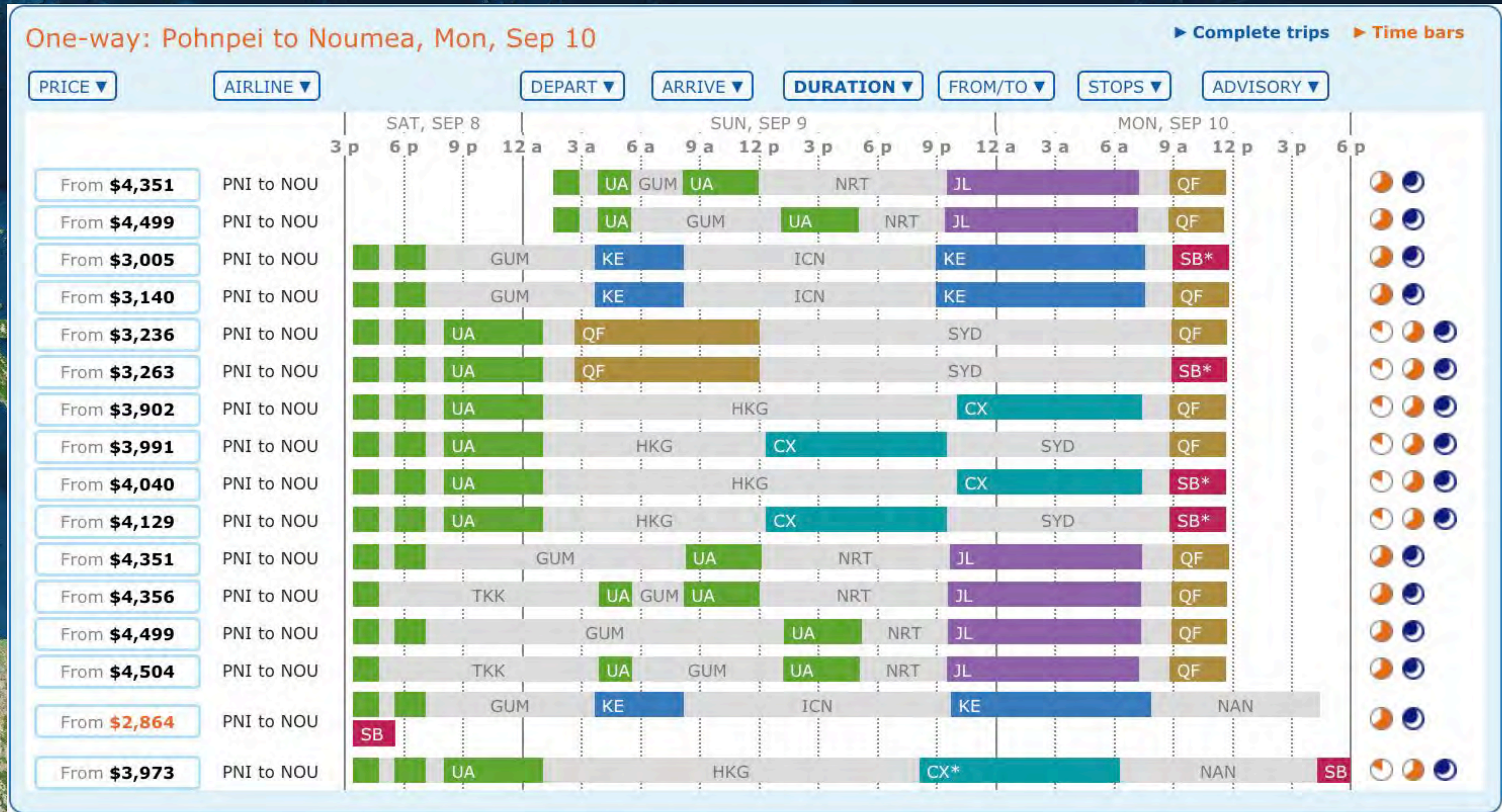
APNIC 46, Noumea

Jonathan Brewer

Consider Pohnpei & Noumea



You Can't Get There From Here



First you fly to Chuuk



Stay on the plane Guam's Next

Guam

Chuuk

Pohnpei

Change for Tokyo



APNIC46 - Nouméa, New Caledonia - Telco2

Nauru

Next Sydney

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Finally Noumea



A Review of Pacific Cables 2000-2018, Abridged

Southern Cross

Oregon

Los Angeles

Hawaii

Suva

Sydney

Auckland

2000

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Tokyo

Shima

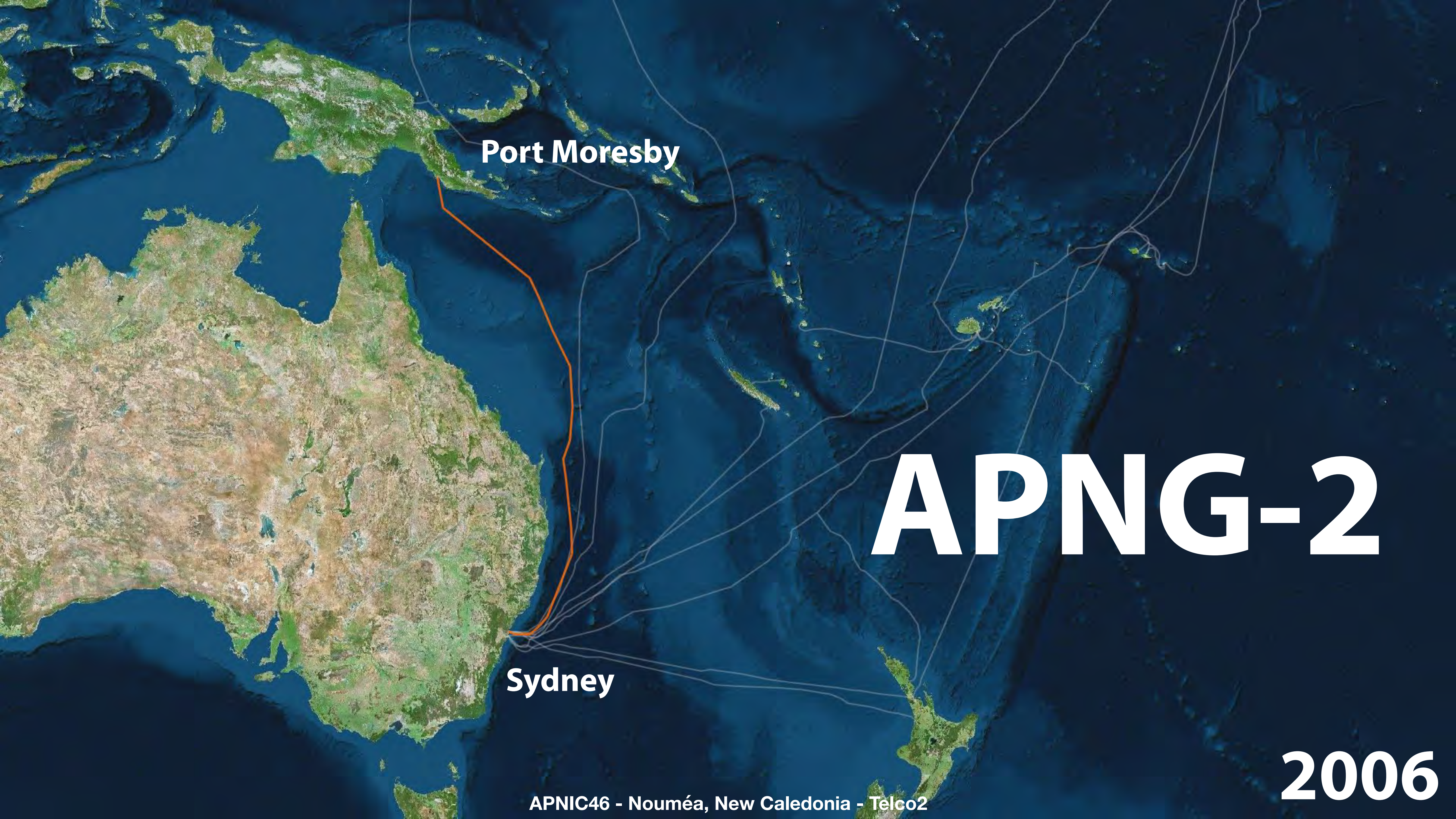
Guam

Sydney

Australia Japan Cable

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2001



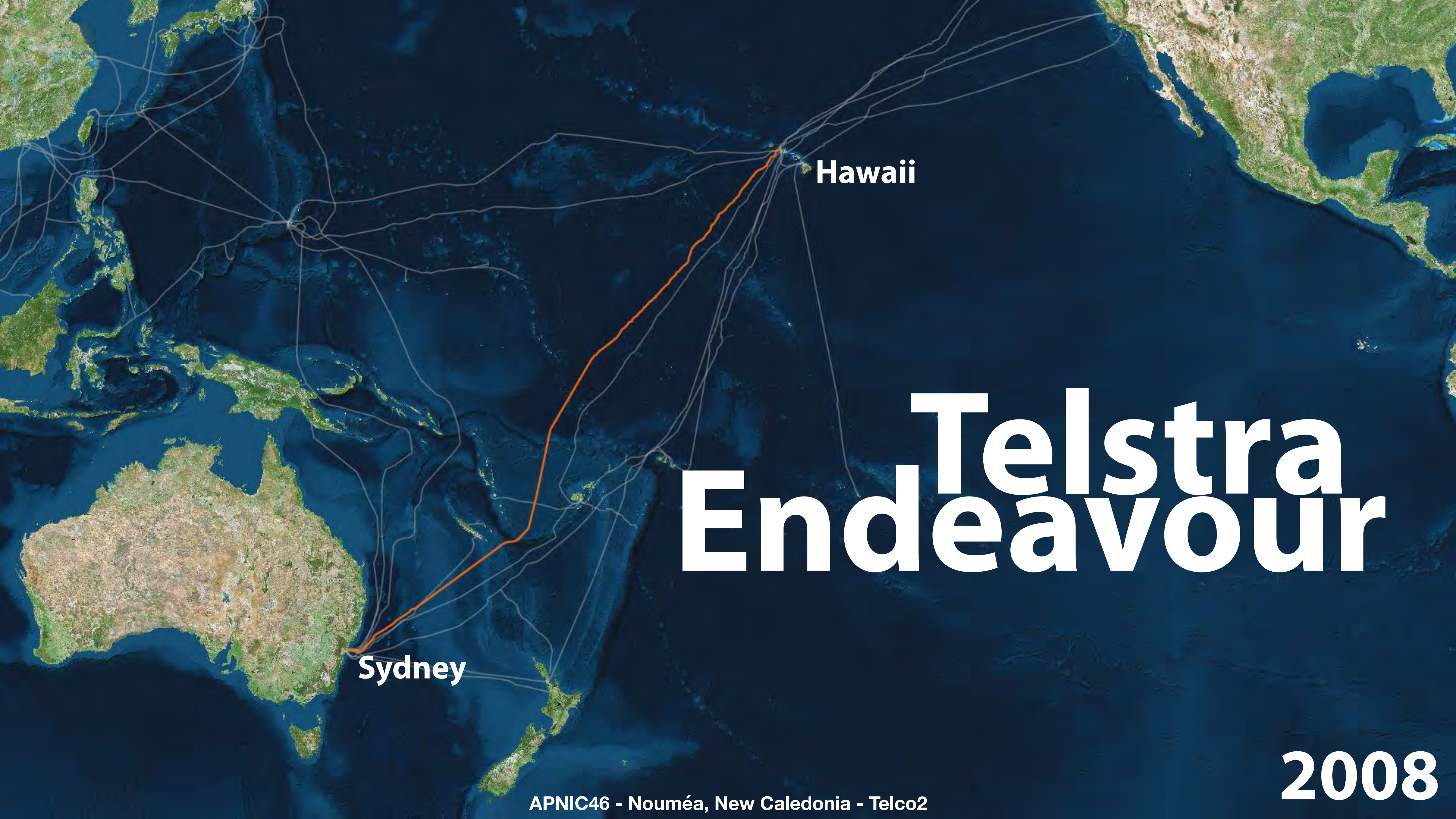
Port Moresby

APNG-2

Sydney

2006

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The image is a satellite map of the Pacific Ocean. A prominent orange line represents the Telstra Endeavour submarine cable, stretching from Sydney, Australia in the bottom left towards Hawaii in the top right. The map shows the outlines of Australia, New Zealand, and parts of Asia and North America. A network of thin grey lines indicates other submarine cables in the region. The text 'Telstra Endeavour' is overlaid in large white font on the right side of the map.

Telstra Endeavour

Sydney

Hawaii

2008

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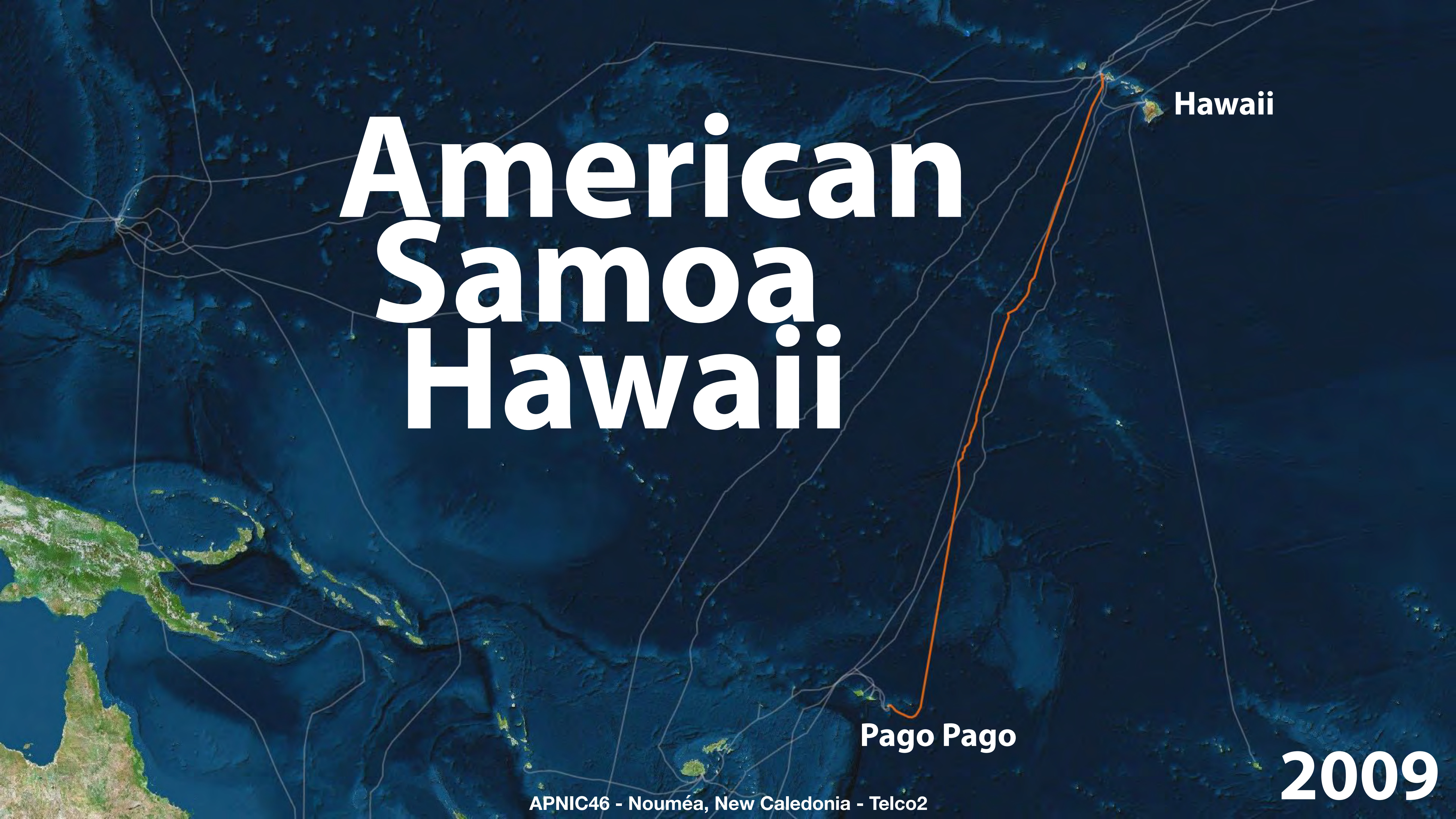
Gondwana-1

Sydney

Noumea

2008

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A satellite map of the Pacific Ocean. A thick orange line represents a submarine cable route starting from the Hawaiian Islands in the upper right and extending south to Pago Pago in the lower right. Thin white lines indicate other submarine cable routes across the ocean floor. The landmasses of Hawaii and parts of North America and South America are visible in green and brown. The text "American Samoa Hawaii" is overlaid in large white font.

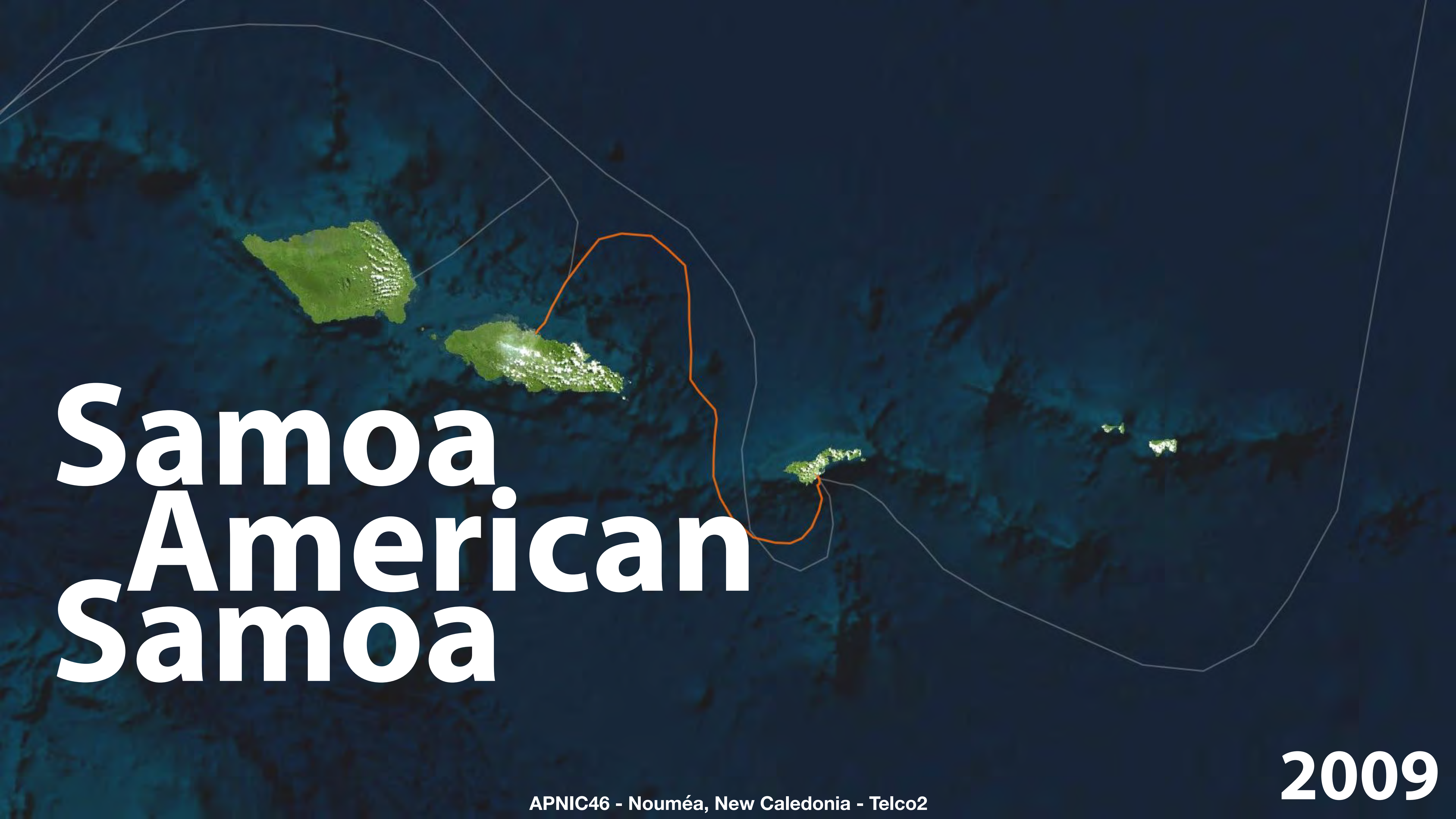
American Samoa Hawaii

Hawaii

Pago Pago

APNIC46 - Nouméa, New Caledonia - Telco2

2009



Samoa American Samoa

2009



California

Hawaii

Philippines

Guam

Asia America Gateway

Hong Kong
Vietnam
Brunei
Bangkok
Malaysia
Singapore

2009

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Pipe Pacific Cable (PPC-1)

Guam

Madang

Sydney

APNIC46 - Nouméa, New Caledonia - Telco2

2009

You Can't Get There From Here

Madang

Port Moresby

2009

HANTRU-1

Guam

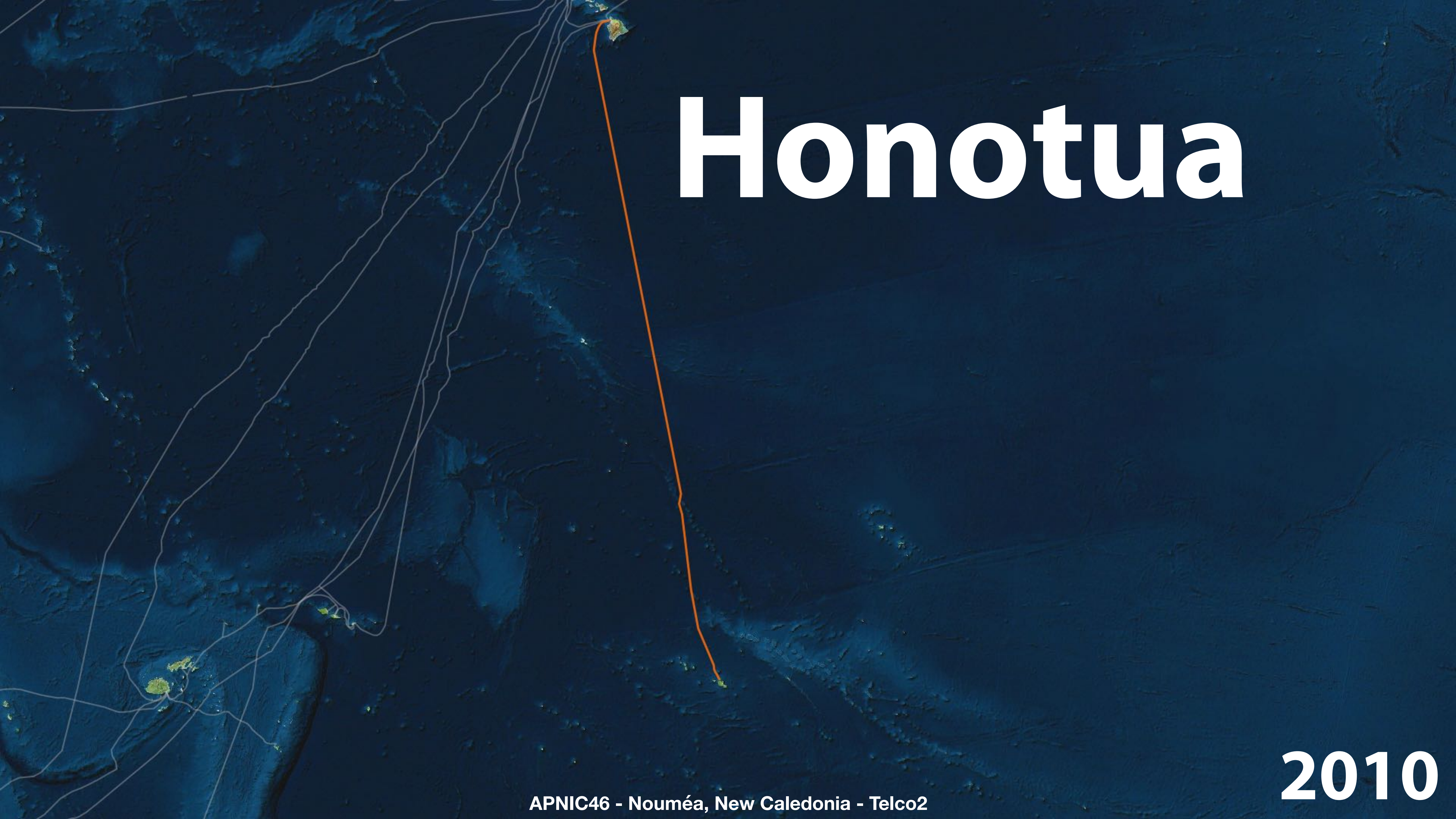
Kwajalein

Majuro

Pohnpei

2010

Honotua



Tonga Suva

Suva

Tonga

Interchange 1

Port Vila

Suva

2013



Sydney

Auckland

Tasman Global Access

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2017



Davao
Manado

Guam

Hawaii

South East Asia-United States

2017

Mindanao

Manila

Davao

2017

Belau Cable

Koror

Yap Cable

Yap

2018

Tui Samoa

Suva

Futuna

Wallis

Apia

2018

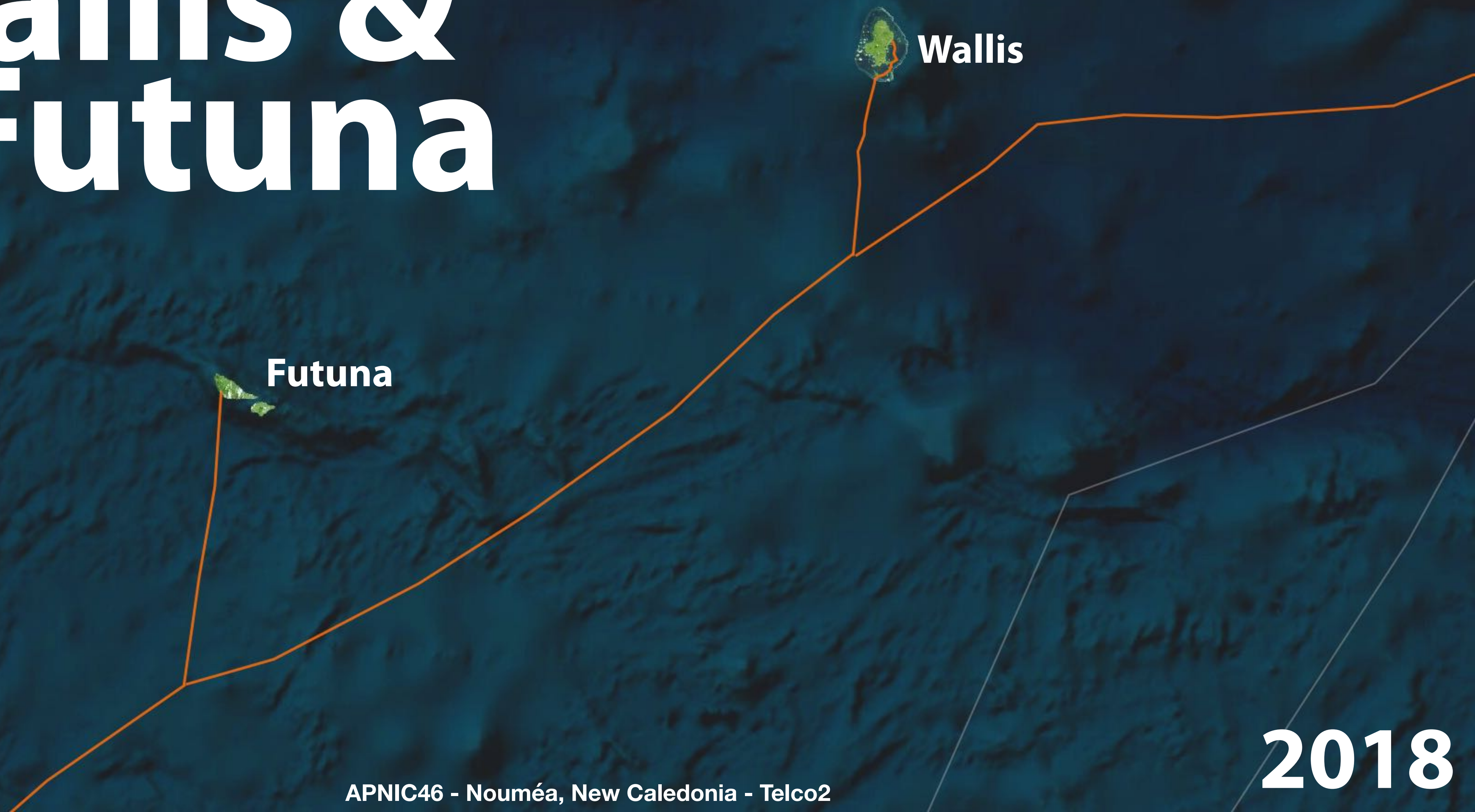
Savai'i

Tuasivi

Apia

2018

Wallis & Futuna



Wallis

Futuna

Vanua Levu

Savusavu

Suva

2018

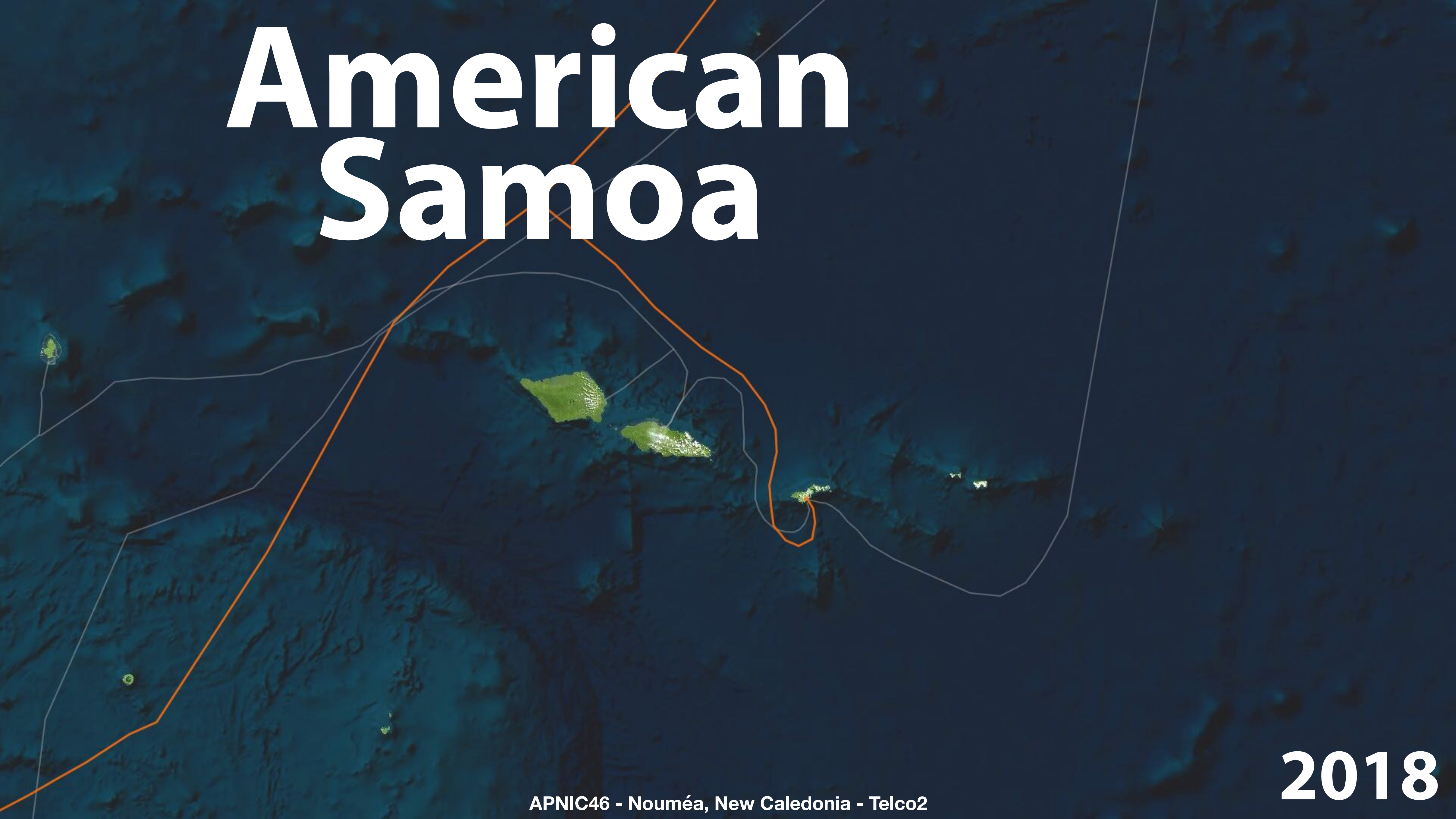
Hawaiiki

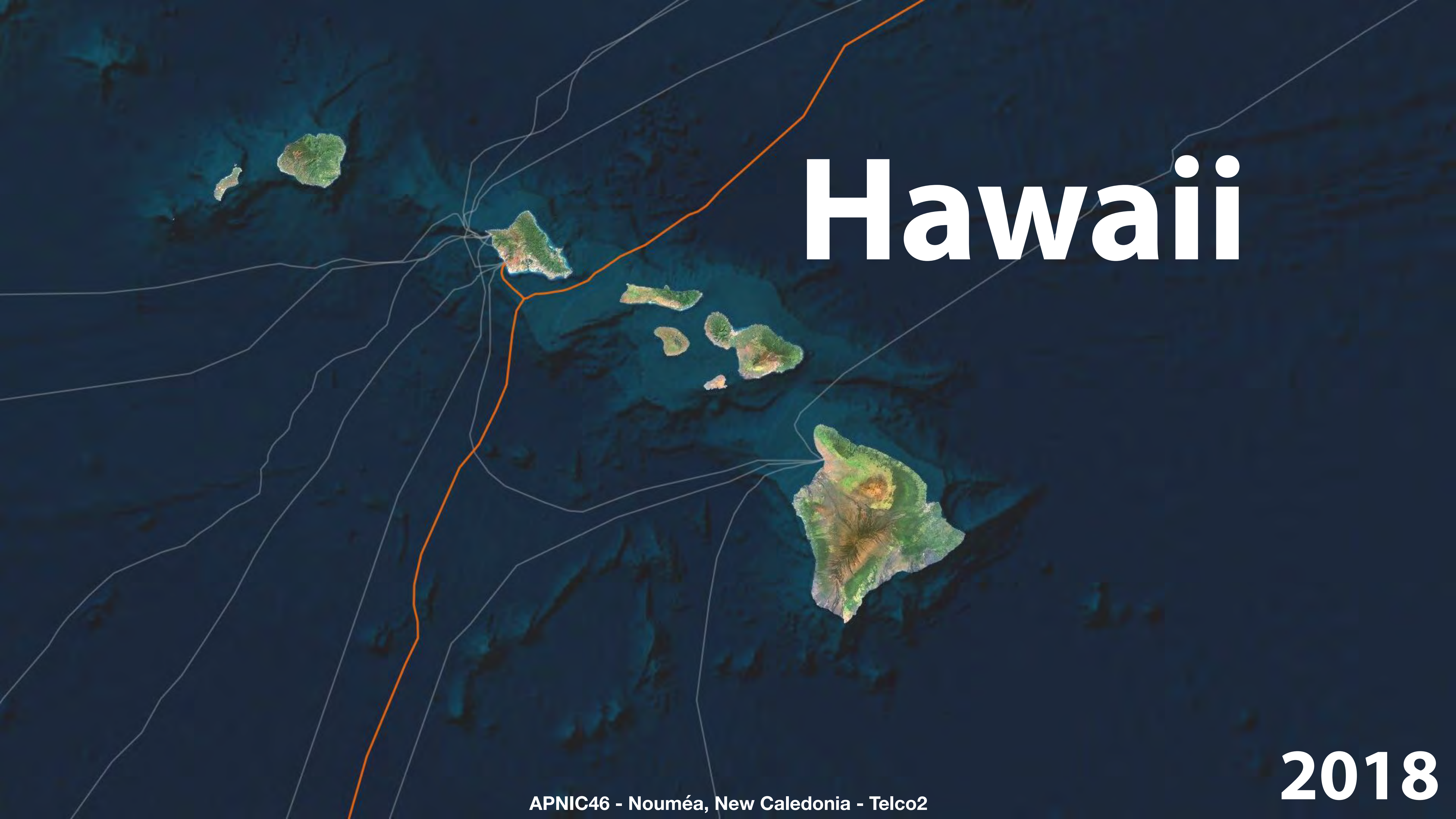


APNIC46 - Nouméa, New Caledonia - Telco2

2018

American Samoa



A satellite map of the Hawaiian Islands. The islands are shown in green and brown, indicating vegetation and terrain. The surrounding ocean is dark blue. A network of white lines is overlaid on the map, representing various connections or routes. A prominent orange line runs from the top right, curving around the islands and extending towards the bottom left. Other white lines radiate from the main islands, connecting to various points in the ocean.

Hawaii

2018

Australia Singapore Cable

2018

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Unconnnected?

APNIC46 - Nouméa, New Caledonia - Telco2

Up In The Sky



Photo: SpaceX

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JCSAT 14 (2016)
Optus B3 (2009)

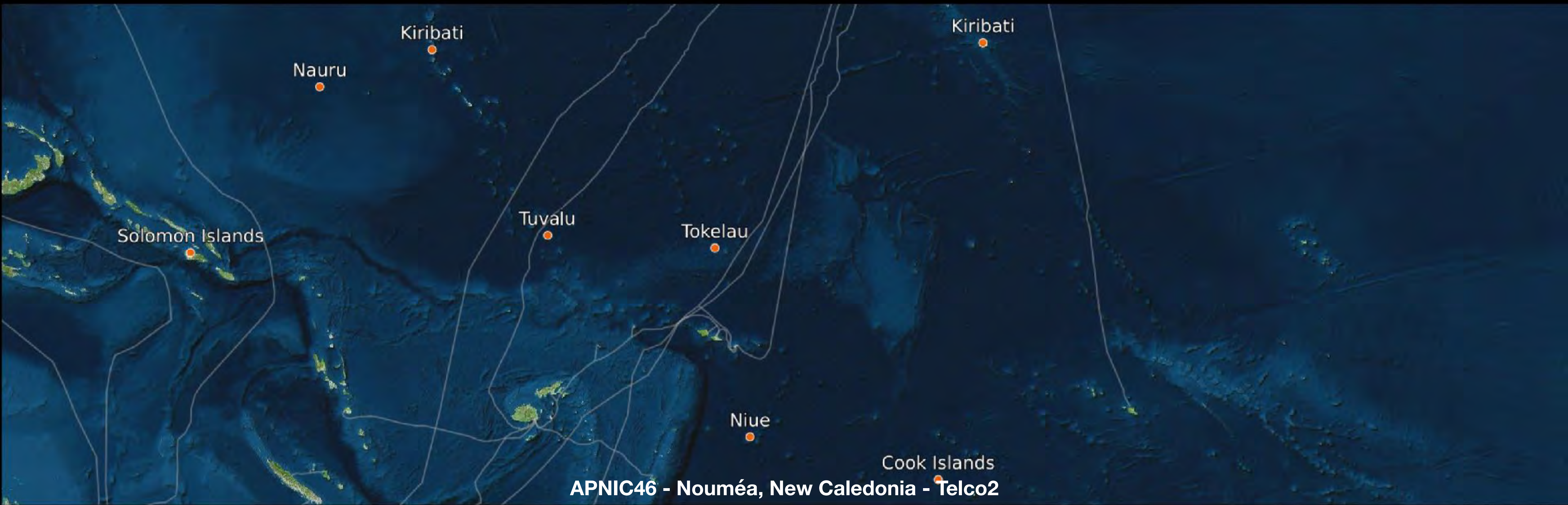
Superbird 8 (2018)
Optus D4 (2014)
Intelsat 19 (2012)

Eutelsat 172B (2011)

Intelsat 18 (2011)

NSS 9 (2009)

Ten Years of Satellite



JCSAT-14

- Owned by Sky Perfect JSAT Corporation
- Geostationary Orbit at 154 degrees East
- In-Service July 2016
- 26 C-band transponders
- 18-Ku-band transponders
- Provides TV + High Speed Broadband
- Excellent Pacific Islands Coverage

2016



EUTELSAT 172B

- Owned by Eutelsat
- Geostationary Orbit at 172 degrees East
- In-Service November 2017
- 14 C-band transponders
- 36 Ku-band transponders
- In-flight broadband & Cellular backhaul
- Excellent Pacific Islands coverage

2017



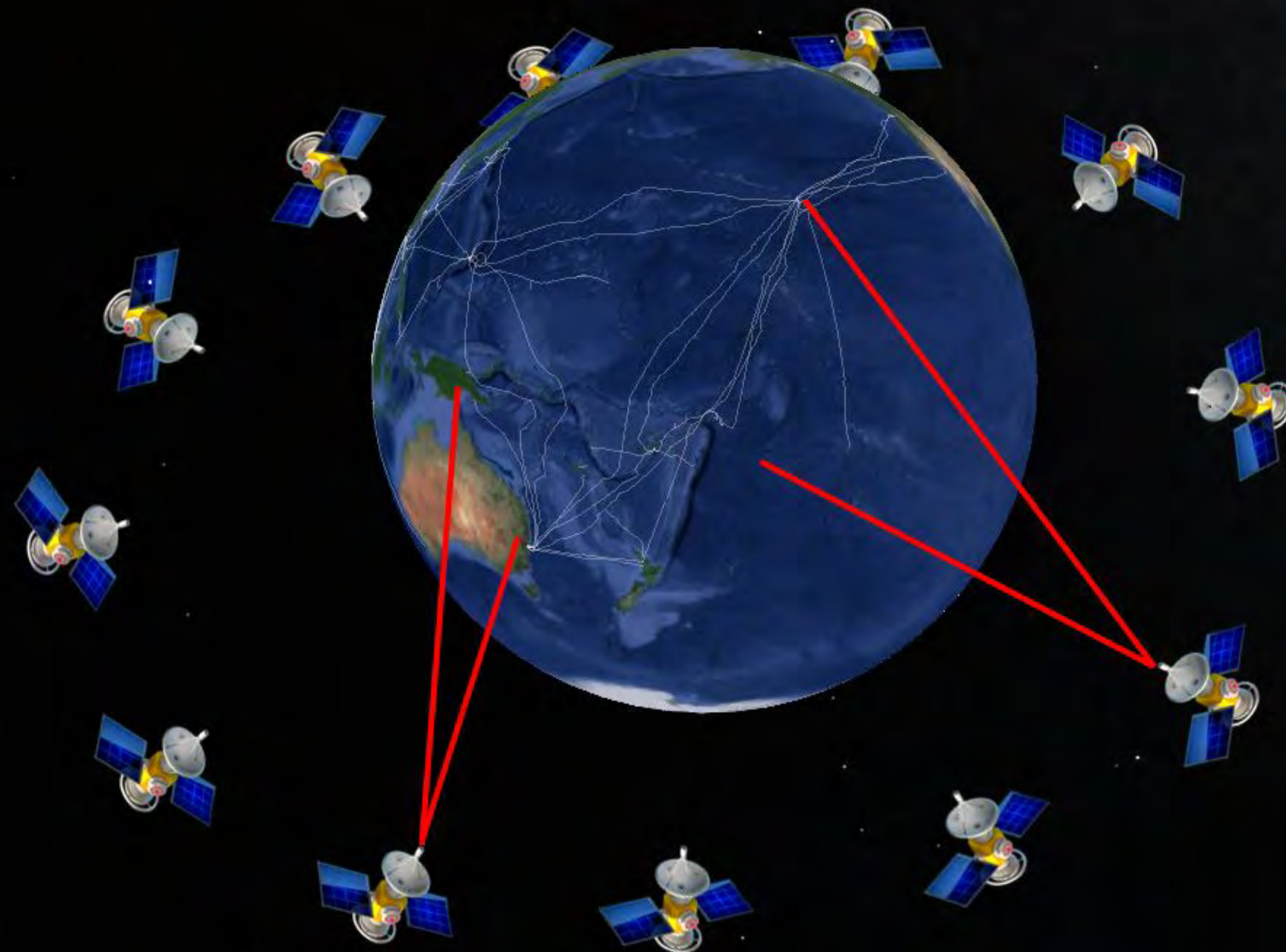
03b Networks

- Medium Earth Orbit, Ka band since 2014
- Global +/- 45° Cover for Carrier & Enterprise
- 384 Gbps of global capacity
- 2 Gbps, 700 km diameter beams
- 16 Satellites in orbit today , 4 more in 2019
- 2x Tracking antennas req
- Rain fade possible even w/ 4m dish
- 100% owned by SES since 2016

2018



03b Networks



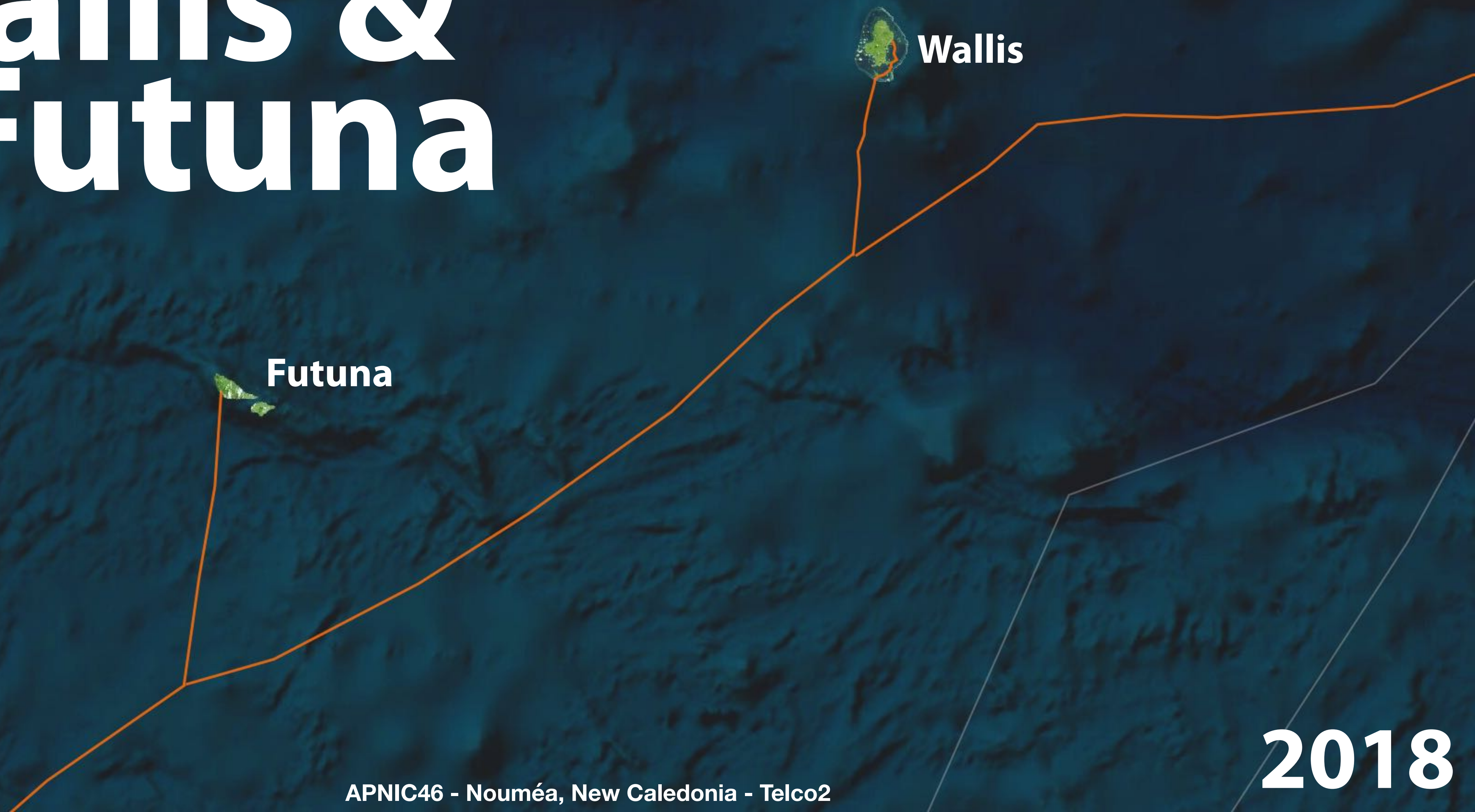
2018

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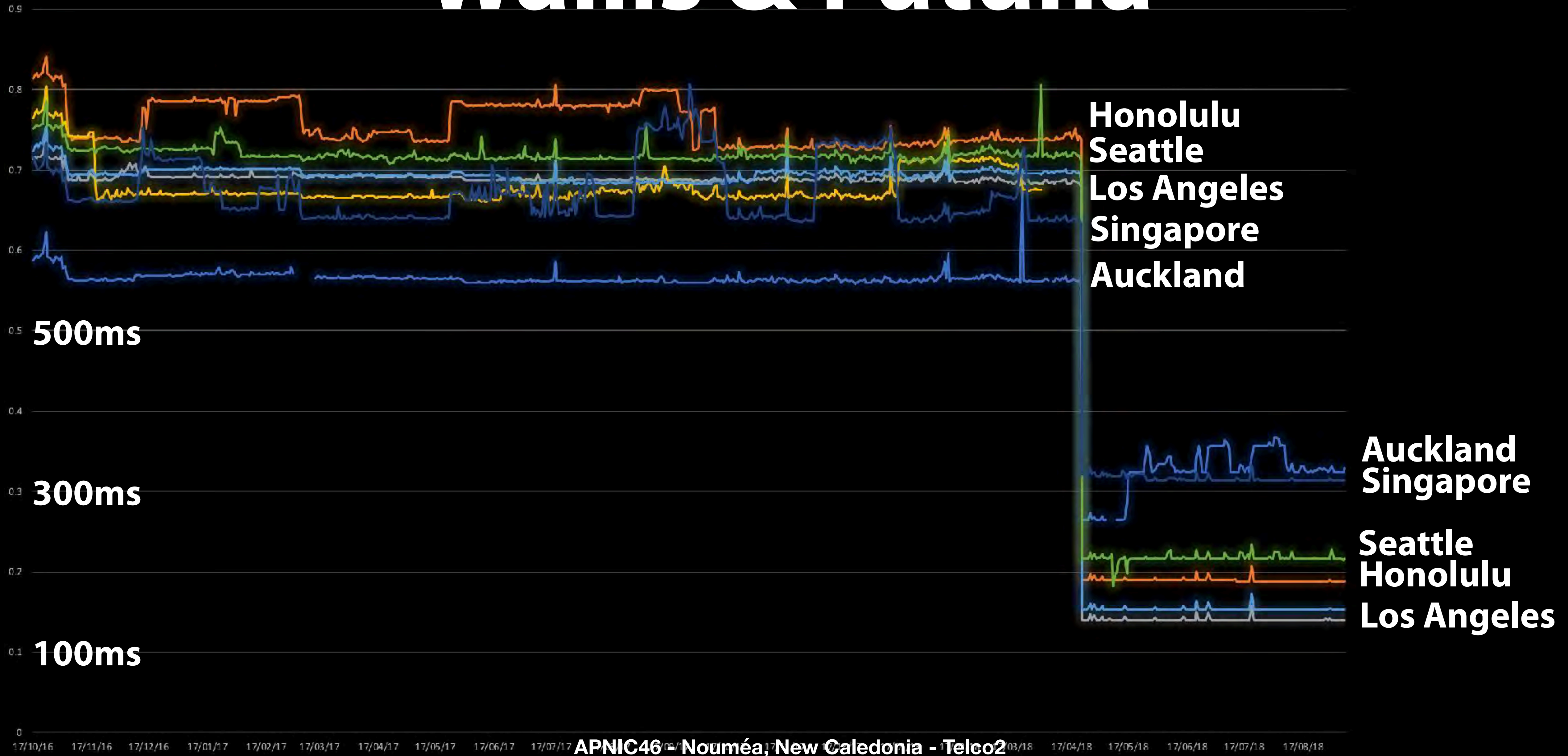


The Connected Pacific: Metrics

Wallis & Futuna



Wallis & Futuna





Tokyo

Los Angeles

150 ms

Honolulu

190 ms

Singapore

310 ms

Wallis

Auckland

320 ms

Wallis & Futuna



Wallis & Futuna

How Do We Fix This?

A Peering Strategy for the Pacific Islands



This site reviews the telecommunications environment of the Pacific Islands. It looks at each community's connectivity to the world: telecommunications, sea freight, air routes, and trade. It provides real-time statistics on provider market share. It considers the complexity of island telecommunications through the mythical nation of Avaiki. Over time it will be expanded to include data on carrier interconnections and performance to each market's major trading partners.



The Connected Pacific

<https://pacpeer.org/>

<https://jon.brewer.nz/>

