

Space Growth Partnership (SGP) Trade and Exports Forum

Emerging Markets

Context

- ▶ Work over the last year was focussed on identifying which countries could be suited for export campaigns supported by UK government
 - ▶ DIT threshold implied that only countries with >£75M/y exports would be suitable
 - ▶ USA, China, India all considered & success in USA & India
 - ▶ Other countries always on the radar but could not reach DIT threshold
- ▶ Goal now: from remaining 192 countries which ones should we focus on and how?
 - ▶ Developed markets : need to demonstrate additionally
 - ▶ Emerging markets (upper low/middle income): need high growth countries already demonstrating space opportunities

Candidates

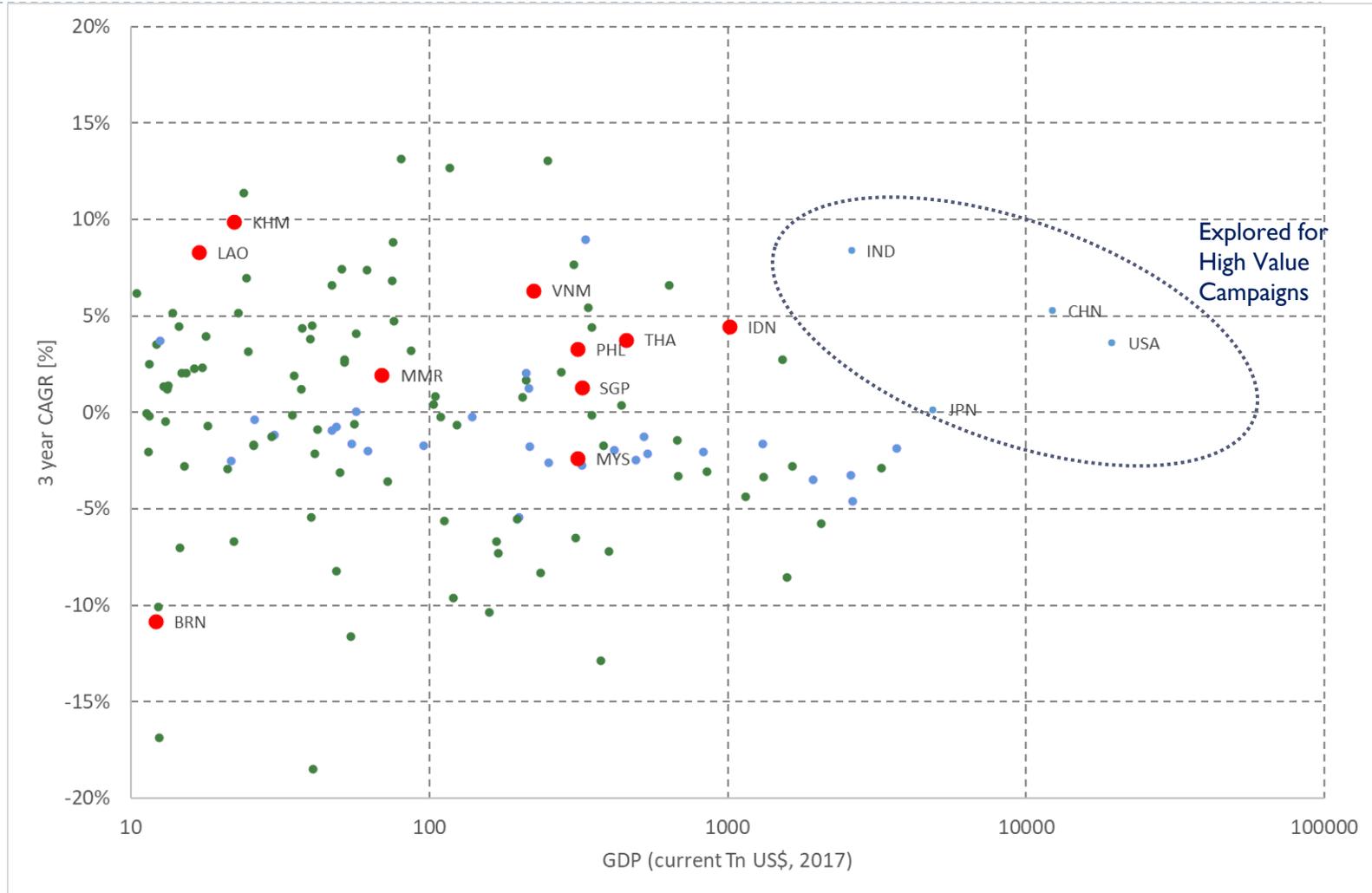
- ▶ **Developed countries:**

- ▶ Australia and Canada: interesting as targets for future FTAs and defence/security relationships

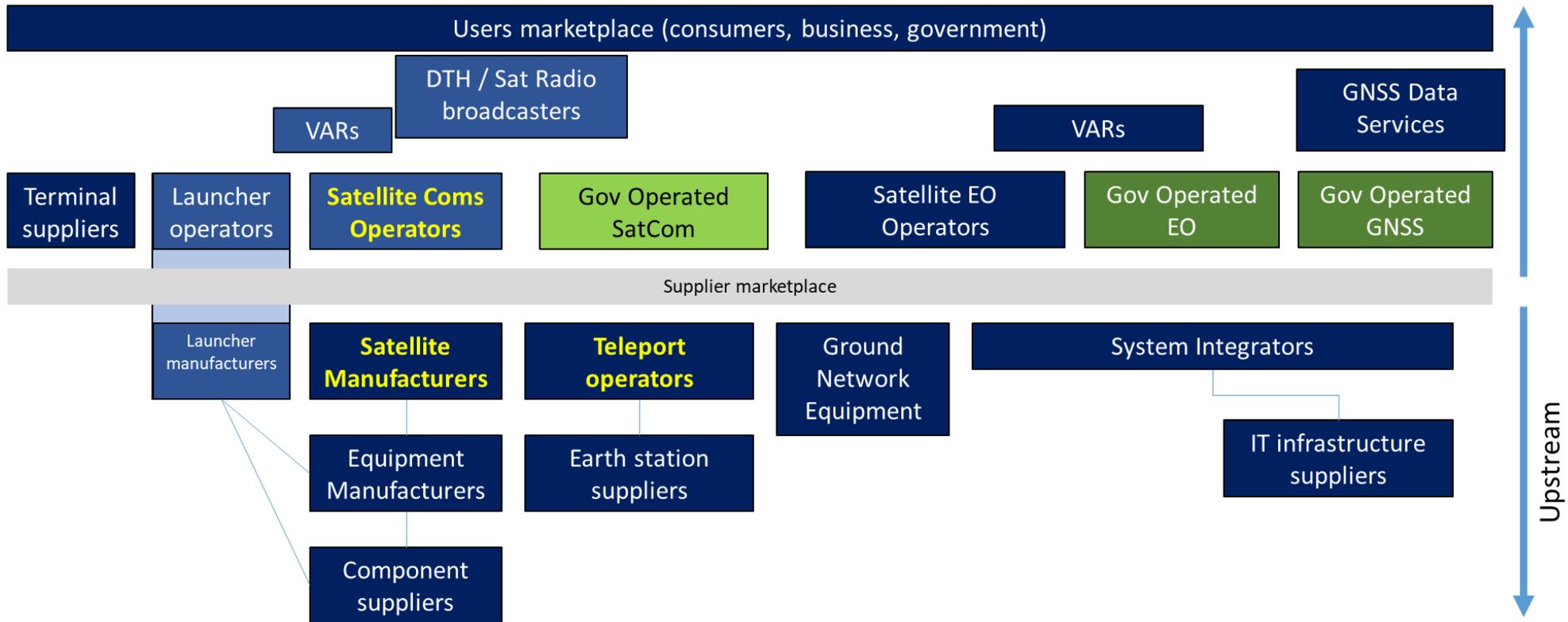
- ▶ **Developing countries:**

- ▶ Latin America
- ▶ SE Asia – chosen as combined a high interest in space technology, applications as well as rapid economic growth + UK exploring joining TPP
- ▶ Africa

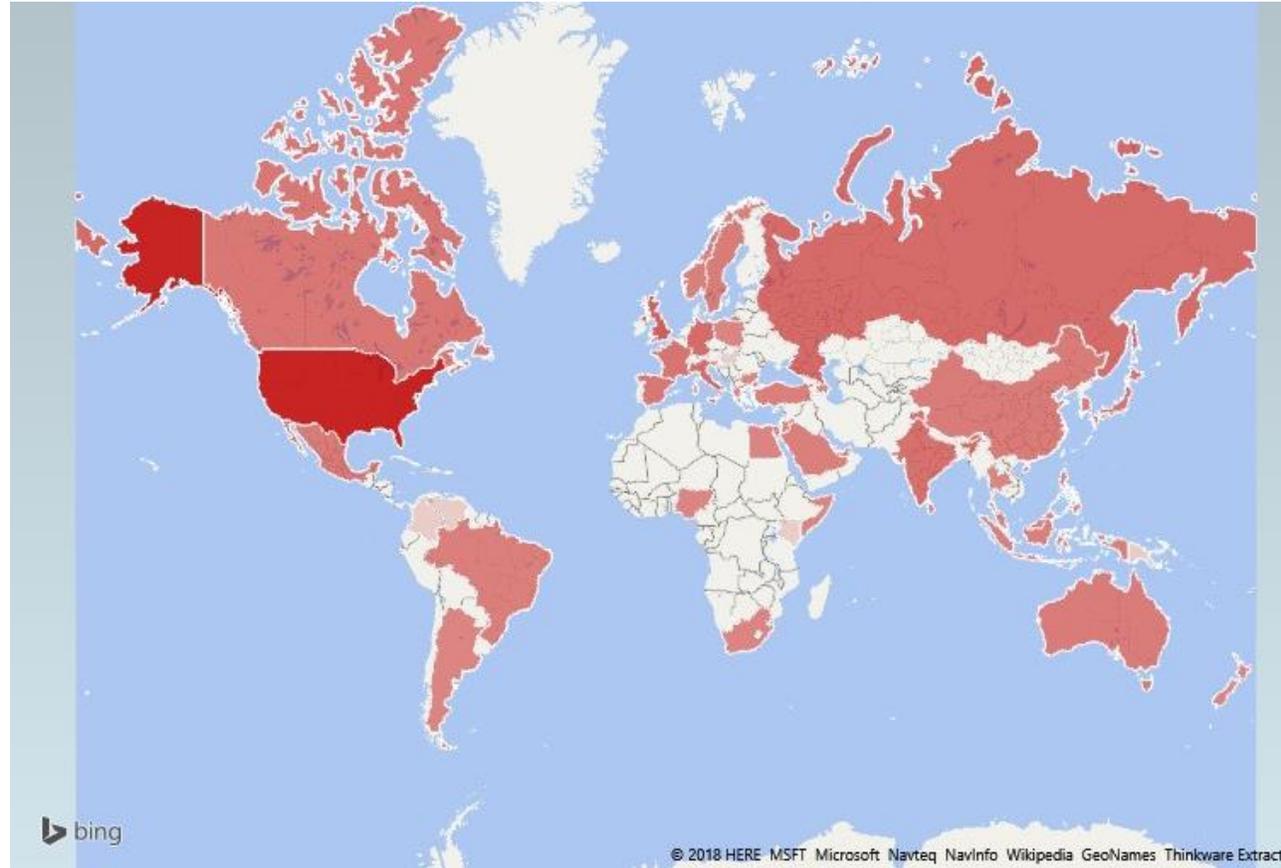
SE Asian Markets



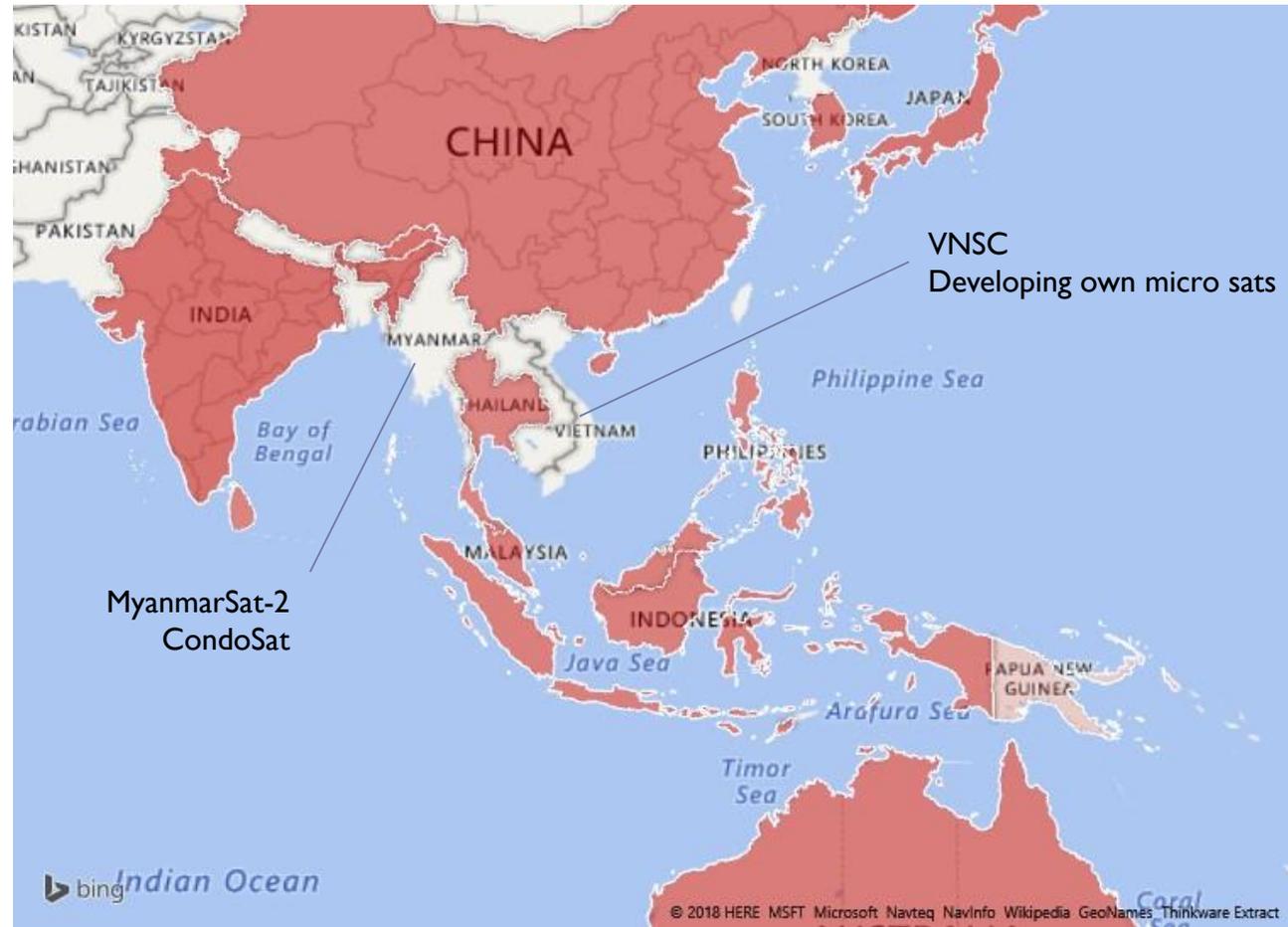
Simplistic market segmentation



Sat operators, manufacturers and teleport HQs



Focus on SE Asia



Association of Southeast Asian Nations, ASEAN

South East Asian country snapshot in 2017

ASEAN comprises 10 member countries, each at a different stage of economic and energy development



Source: Wood Mackenzie

Specific features of SE Asia

Strengths (for UK space exporters)

- ▶ Diverse & complex geography make deploying terrestrial communications difficult → a strong existing market for geostationary satellites and accompanying equipment/systems
- ▶ Climatic and environmental challenges make EO an attractive solution
- ▶ Modest level of indigenous technology development makes imported solutions attractive but recognizing strong desire for local solutions

Weaknesses (for UK space exporters)

- ▶ Distance & cost of travel / logistics
- ▶ Complexity of bureaucracy & industrial / political environment
- ▶ Lack of transparency
- ▶ Comparative level of UK influence
- ▶ Not suited to 'quick-wins'; may take years to build relationships

Case study: Indonesia

- ▶ Indonesia chosen as a case study because:
 - ▶ It is the largest economy in SE Asia
 - ▶ It has shown significant interest in satellites; it has operators and a space agency
 - ▶ UK companies are already active and there is existing experience to draw upon

Indonesia PESTLE

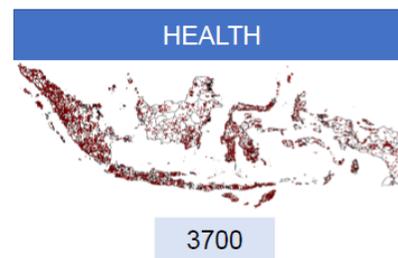
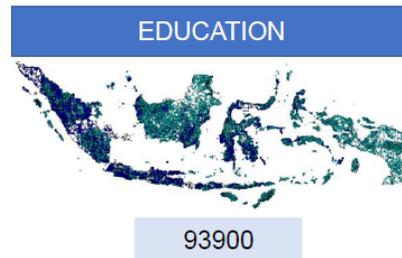
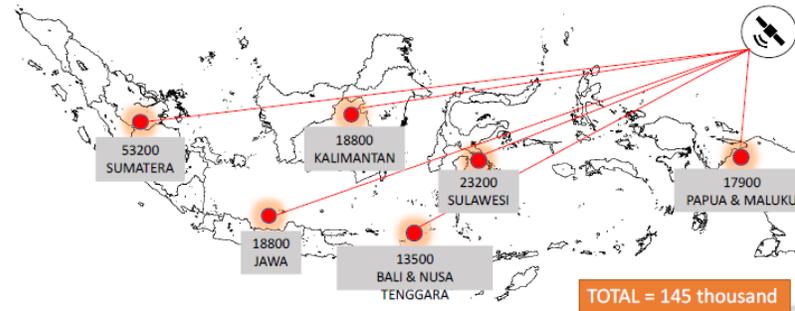
Political	Economic	Social
<p>Politically stable with a multi-party democracy</p> <p>Member of ASEAN</p>	<p>4th most populous country in the world, largest economy in SE Asia, growing at stable 5.4% (16th in world by GDP)</p> <p>UK is 7th largest investor in Indonesia</p>	<p>Emerging middle class driving demand for ICT</p> <p>Ranked 116 in human development index out of 189 (but rising quickly)</p>
Technological	Legal	Environmental
<p>Has a space agency (LAPAN) & research programme</p> <p>Developing indigenous satellites & rockets although with low investment</p> <p>Telkom, BRI and PSN have all ordered separate geo satellites in last 3 years (all won by SSL)</p>	<p>WTO member</p> <p>Complex system with lack of transparency</p>	<p>Diverse natural resources but challenges like illegal logging and fishing</p> <p>Huge biodiversity coupled with intensely developed urban areas</p> <p>Oil and gas exporter</p>

Gov Multifunctional Sat illustrates challenge and ambition

Market Sounding
Invitation Attache

SMF Objective

- Over 145,000 public sites (schools, hospitals, state/local government) around Indonesia lack connectivity
- Satellite is the only feasible access technology to cost-effectively address these remote locations
- Connecting these sites will require 200 Gbps of new HTS capacity to be provisioned across Indonesia



- 200 Gbps shall be provisioned by a combination of...
 - a) Commercially leased capacity (not part of this contract)
 - b) **SMF satellite**



SMF shall provide approx. 150 Gbps of capacity across Indonesia

2

Indonesia Opportunities?

Governmental cooperation

LAPAN budget ~£40M per year

Actively seeking training opportunities abroad

Seeking industry partner for 150 Gbps national HTS project

Disaster relief particularly relevant

Manufacturing

LAN developing a series of small satellites (<100kg)

Looking to develop launcher technology but no significant budgets

Commercial SatCom

Indonesian companies are active buyers of geo satellite and bandwidth

Opportunities for equipment supply around telecoms projects

Earth Observation

Ongoing EO projects particularly around land use and maritime monitoring

Actively involved in the EO community

How to proceed?

- ▶ We are looking to develop a specific recommendation within the Space Sector Deal
- ▶ We need to deepen the evidence base
- ▶ Do you agree with the following?
 - ▶ The UK should seek to develop joint R&D projects with ASEAN countries
 - ▶ UK Government and Industry should look for opportunities to develop long term commercial relationships within ASEAN countries
 - ▶ UK can offer capacity building to the region
 - ▶ UK should look to engage in conferences and workshops in the region
 - ▶ Schemes like IPP should be continued and extended
- ▶ Please provide feedback to Jaime or Julian

Examples: PASSES project

CGI

PASSES - Peatland Assessment in SE Asia by Satellite



- The top-level aim of PASSES is to:

Design, develop and deploy a sustainable end-to-end EO-enabled monitoring system supporting more efficient and effective peatland monitoring and management capabilities for both public and private sector stakeholders in SE Asia

- ▶ **Partners:** Geomatic Ventures Ltd, Centre for Ecology and Hydrology, University of Leicester, University of Nottingham, Liverpool John Moores University, IPE TripleLine.
- ▶ Dense time series from S-1 provide the input for a novel InSAR technique developed by the University of Nottingham that is core to PASSES and enables observation of vertical displacement of peatland; a key indicator of condition since drained and degraded peat subsides whilst recovering peat (in response to re-wetting interventions) swells and rises.
- ▶ UN Sustainable Development Goal (SDG) 15:
 - ▶ 'Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably managed forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss'.
- ▶ Specifically PASSES will address two sub-goals:
 - ▶ SDG-15.2.1 Progress towards sustainable forest management
 - ▶ SDG-15.3.1. Proportion of land that is degraded over total land area



Key lessons learnt so far



- IPP has been the enabler for the project → IPP is valuable and appreciated
- Opportunity arose from past R&D → critical entry point into market
- Building relationships absolutely key → very hard to maintain and build trust from a distance
- IPP leads to projects which may not be sustainable since they are focussed on aid where the in-country customer is not used to paying → challenging to build a business case

Examples: Sustainable fishing

Inmarsat

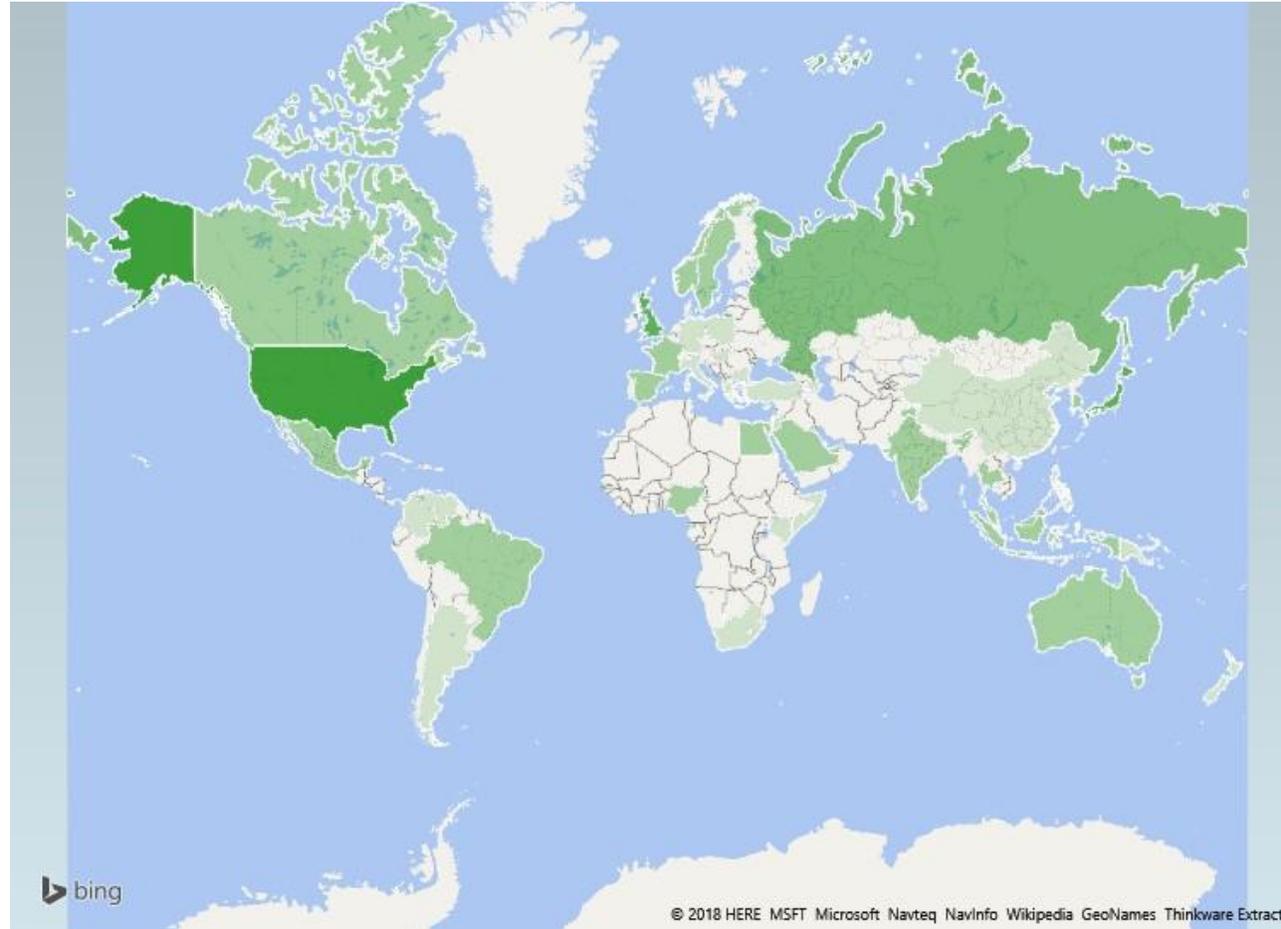
Digital Frontiers



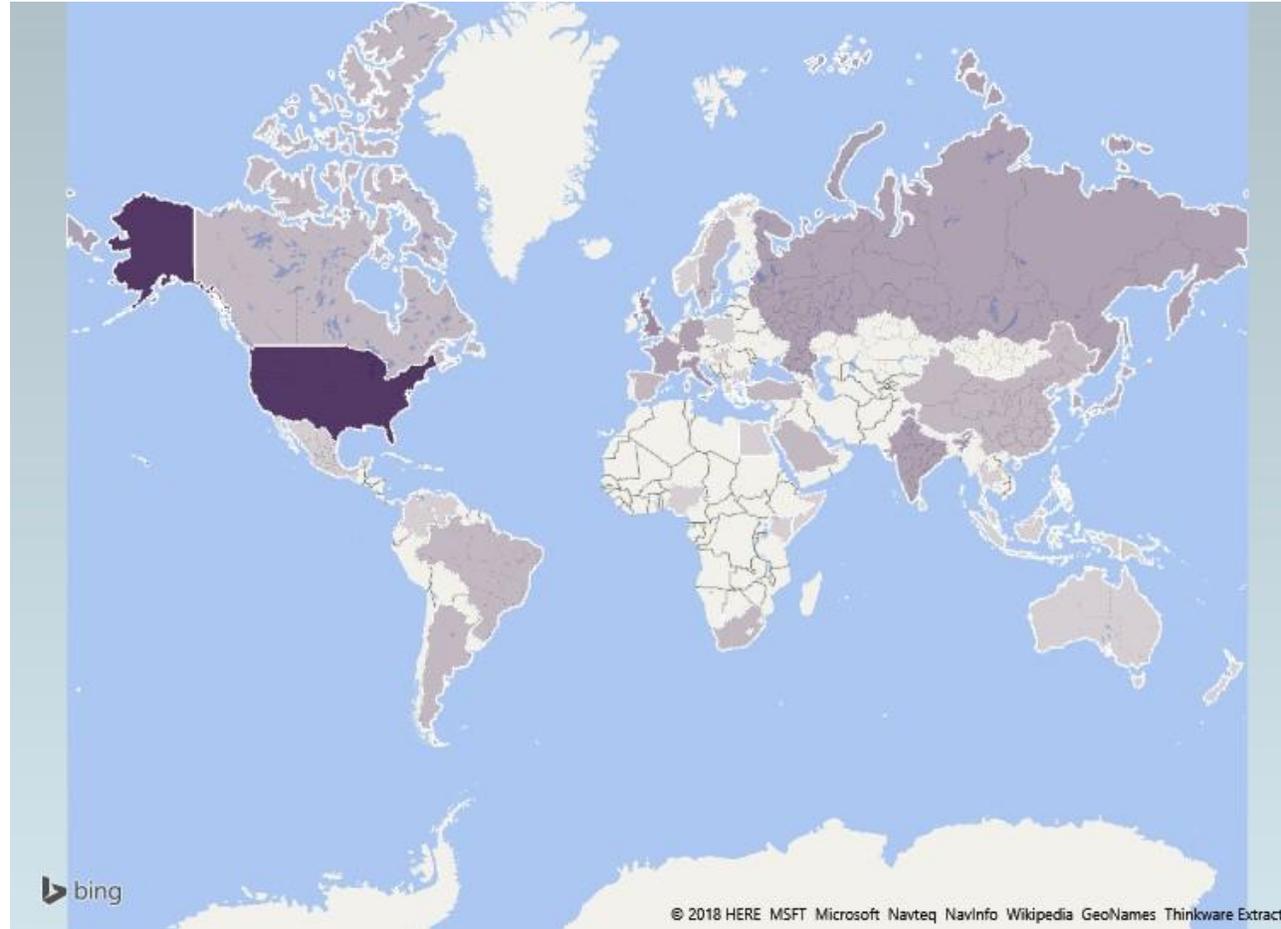
- ▶ *Project: Designing and implementing innovative solutions for smart satellite technology to promote inclusive and sustainable fishing practices in Indonesia.*
- ▶ Inmarsat and a consortium of partners, including [Satellite Applications Catapult](#), [Hatfield Consultants](#), [Poseidon Aquatic Resource Management](#) and local service provider SISFO, are working with the Indonesian Ministry of Marine Affairs and Fisheries (KKP) to reduce illegal fishing and improve safety and livelihood security for the seven-million strong fishing community.
- ▶ Environmentally unsustainable fishing – including illegal and unreported catches – is having huge ecological and financial consequences in the country, impacting on the entire value chain and costing the government around \$3 billion a year. The project will incentivise fishermen to adopt satellite-based Vessel Monitoring Systems (VMS) by building in data services which will enhance their safety, productivity and food security, using Inmarsat's [IsatData Pro](#) machine-to-machine (M2M) technology. It will also help to inform the KKP on the shape of future fishery regulation.
- ▶ These additional capabilities will help keep fishermen safe out at sea, enable contact with home, and improve their catch through accessing real-time data. In addition, it will open up new international commercial markets that demand proof of sustainable fishery practices.
- ▶ By expanding the adoption of VMS, the surveillance and policing capabilities of the KPP will be improved, and information important for sustainable fisheries management will be made available.

Annex

Satellite Comms Operators



Satellite Manufacturers



Teleport Operator HQs

