



Connected Aircraft & Digitalisation of Maritime

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inmarsat
The mobile satellite company™

- **Inmarsat Overview**
- **Global Xpress-Satellite and Ground Infrastructure Coverage**
- **Connected Aircraft**
- **Connected Ship**



A brief history

The industry leader for 40 years

1979 The International Maritime Satellite Organisation was formed as a not-for profit organisation set up by the IMCO, known as In Mar Sat.

1990 Launch of Inmarsat-2 F1 satellite into geostationary orbit.

1992 The IMO, the agency of the United Nations responsible for ship safety, began a phase-in of a new system called Global Maritime Distress and Safety System, or GMDSS for short.

1996 Inmarsat-3 F1 was launched. The first

of five satellites using the latest spot-beam technology to reallocate bandwidth to meet demand.

1999 Inmarsat became the first inter-gov organisation to restructure into a private company.

2005 Inmarsat-4 launched. These fourth-generation satellites, delivered Inmarsat's Broadband Global Area Network (BGAN) and established the world's first global 3G network.

2010 Release of Inmarsat's first phone, the IsatPhone Pro.

2013 The successful launch of Alphasat as one of the most technically advanced satellites for civilian applications and Inmarsat-5 F1 the first of four satellites to deliver Inmarsat's revolutionary Global Xpress service.

2016 Successful launch of Inmarsat-5 F2 and

Inmarsat-5 F3.

2017 Successful launch of Inmarsat-5 F4 and Inmarsat S EAN.

2019 Inmarsat's 40th anniversary.

What differentiates Inmarsat.....



Network
reliability

Global
seamless
mobility

Continuous
broadband
connectivity

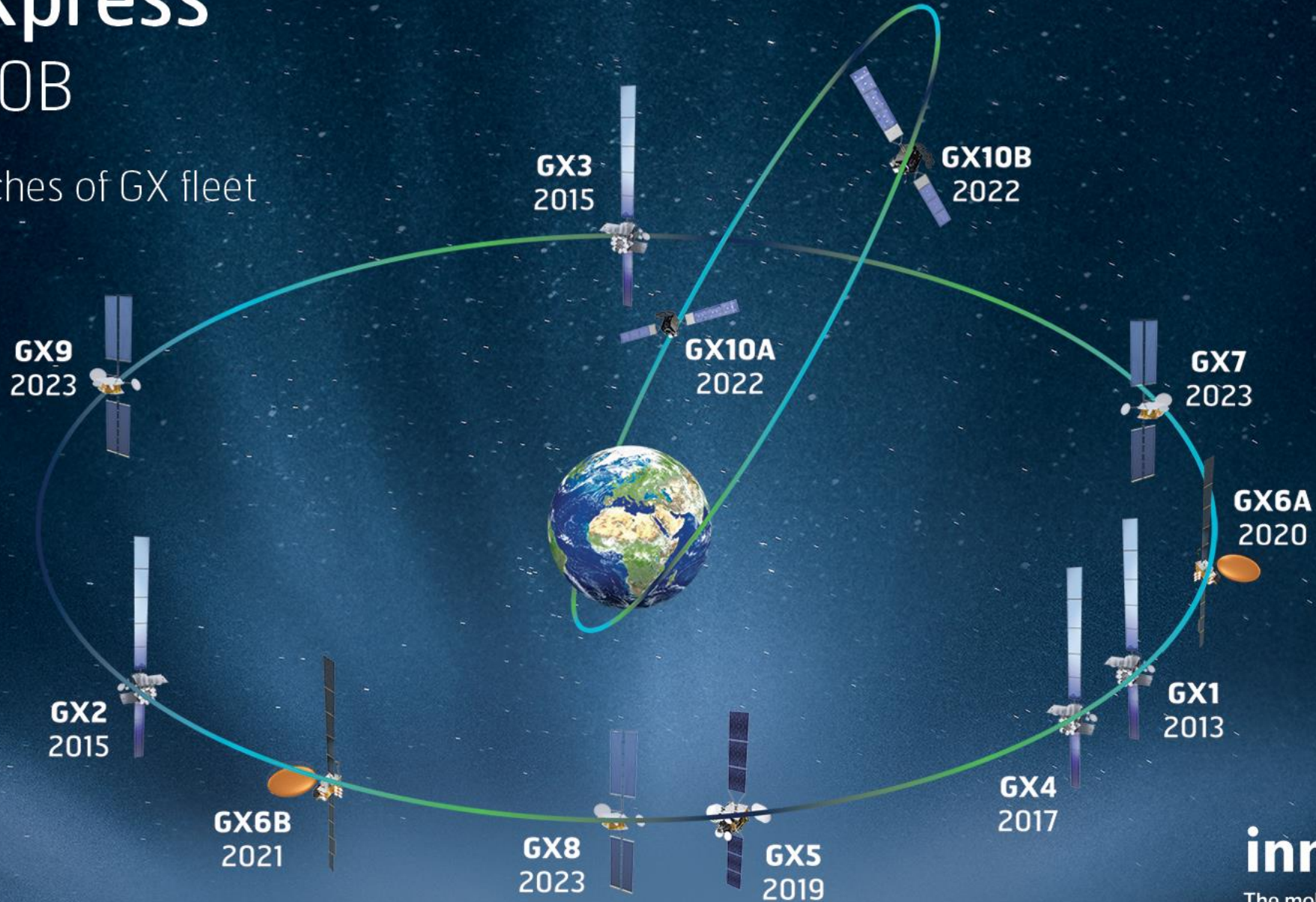
Safety,
security and
protection

Long-term
commitment

Global Xpress

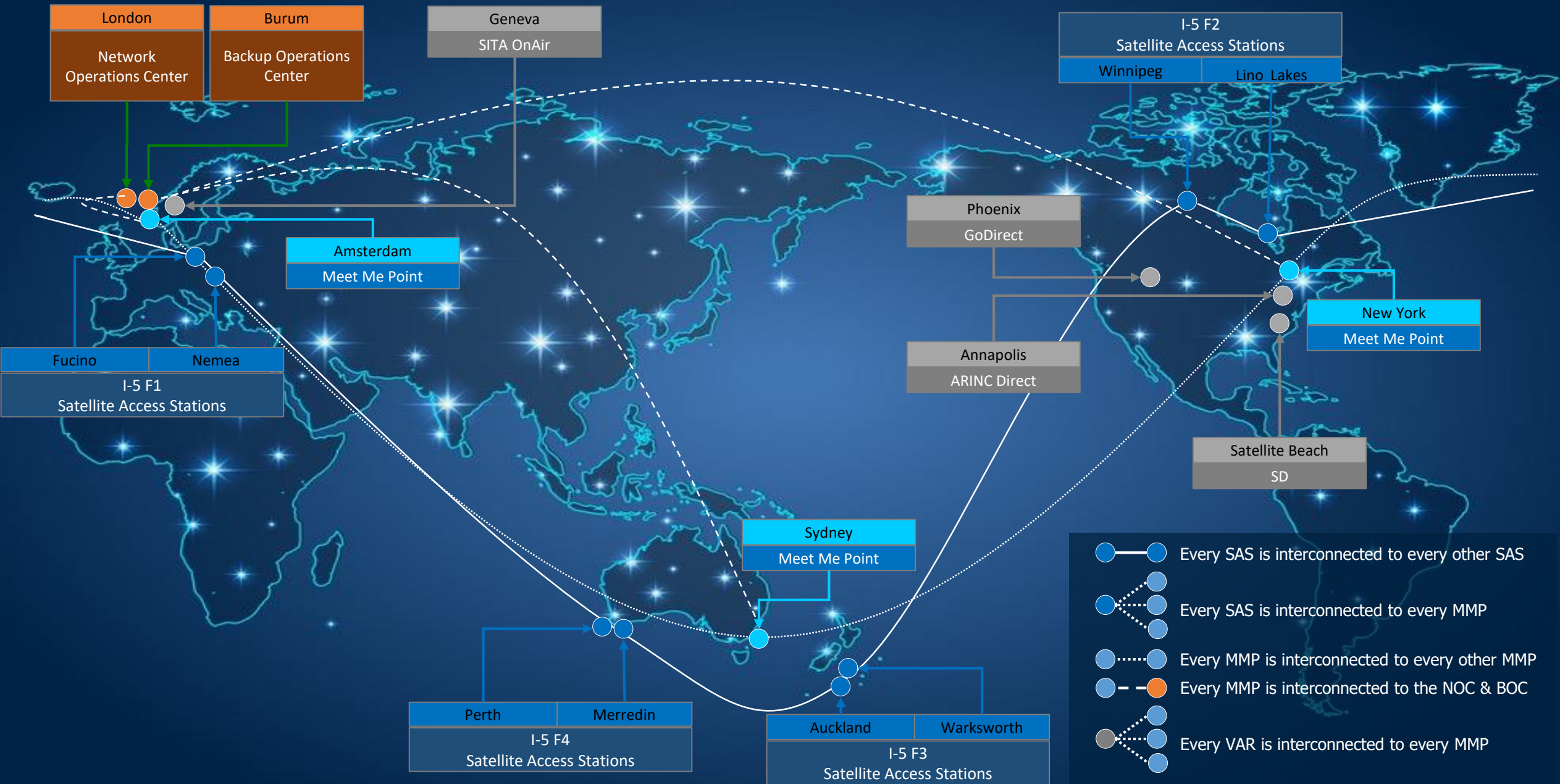
GX1 - GX10B

Scheduled launches of GX fleet



Please note that these are indicative positions

Robust Ground Infrastructure - Gateway & Connectivity



Global Xpress

The ground-breaking evolution

**DYNAMIC
CAPACITY**

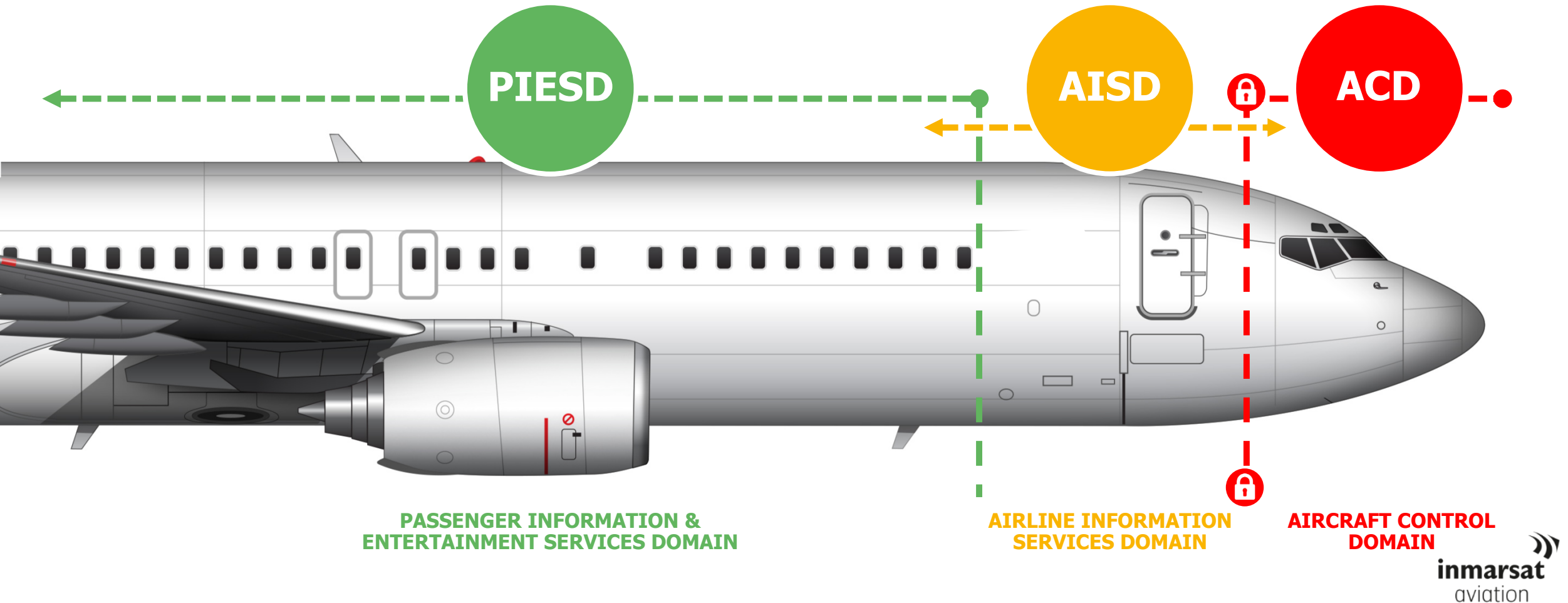
**FLEXIBLE
COVERAGE**

**BACKWARD
COMPATIBLE**

**FASTER
RESPONSE**

The Complete Connected Aircraft: Fit for purpose solutions to deliver benefits

ICAO recognizes three distinct aircraft data domains



Requirements of All Three Domains



High bandwidth **K-band or ground network solutions** for passenger services in the cabin



Safety-certified, highly reliable **L-band solutions** for mission-critical data of the cockpit



Solution dependent on the sensitivity of the data & the need for operational data reliability

Data potentially **split between K-band/ground network and L-band solutions**



Connected Passengers: PASSENGER INFORMATION AND ENTERTAINMENT SERVICES DOMAIN (PIESD)

IN-FLIGHT WI-FI



60%

of all passengers
consider inflight Wi-Fi
a necessity, not a
luxury



44%

said they would stop using
their preferred airline if the
Wi-Fi quality was poor



61%

of passengers who have
experienced good
inflight Wi-Fi consider it
more important than
on-board entertainment
when selecting a carrier



Source: GfK Passenger Survey 2017

Passenger entertainment and network services: This domain can comprise multiple systems that interconnect, such as passenger device connectivity systems and broadband television or connectivity systems.

Defining Connectivity at Sea

Core L-band services

Core Ka-band services

L-band

I-3, I-4, I6 satellites

FleetXpress

GX

I-5 - GX 7/8/9/10 satellites

Applications enablement

Delivering value – added solutions for customers and partners

Integration

Integration

Digitalisation in all key maritime sectors

The 'connected vessel'



Offshore Supply

176 Gb
Average volume of data
downloaded per vessel
in January 2018



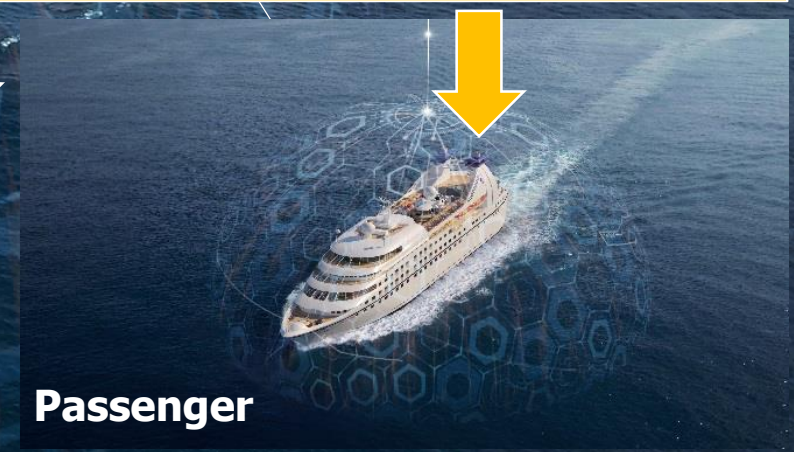
Super Yachts

New CIR Plans / Crew Xpress / Fleet Hotspot / Fleet Edge / Dual Antenna / High Power BUC / Flexible Subscriptions / Dedicated Bandwidth / Fleet Secure Endpoint / Fleet Data



Fishing

270 Gb
Average volume of data
downloaded per vessel
in January 2019



Passenger

Merchant Marine

Fleet Data



Connected Aircraft/Ship – Partners

Some of the partners vital to delivering Inmarsat services:

The Honeywell logo, featuring the word "Honeywell" in white sans-serif font on a red rectangular background.The THALES logo, featuring the word "THALES" in blue sans-serif font, with a small blue dot above the letter "A".The AIRBUS logo, featuring the word "AIRBUS" in blue sans-serif font on a light blue rectangular background.The COBHAM logo, featuring the word "COBHAM" in white italicized sans-serif font on a blue rectangular background.The SITAONAIRO logo, featuring the word "SITAONAIRO" in green sans-serif font, followed by a green circular icon containing a white airplane and signal waves.The Intellian logo, featuring the word "Intellian" in blue sans-serif font.