



Satellite Telemetry Services

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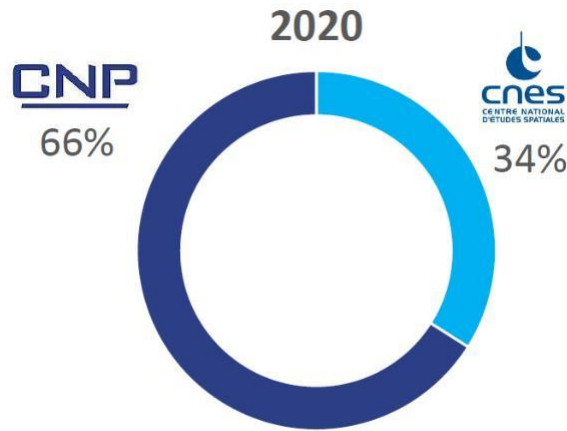
<http://www.cls-telemetry.com>



ARGOS
CONNECTED. PROTECTED.



COMPANY PROFILE



CLS is a **subsidiary of the French Space Agency (CNES)** and was created in 1986.

- ✓ **Unique operator of the Argos system**
- ✓ **Iridium services & hardware provider** dedicated to ocean platforms

With 2 global coverage LEO satellite systems and 3 processing centers operational 24/7, CLS is the **privileged partner of ocean in-situ programs**

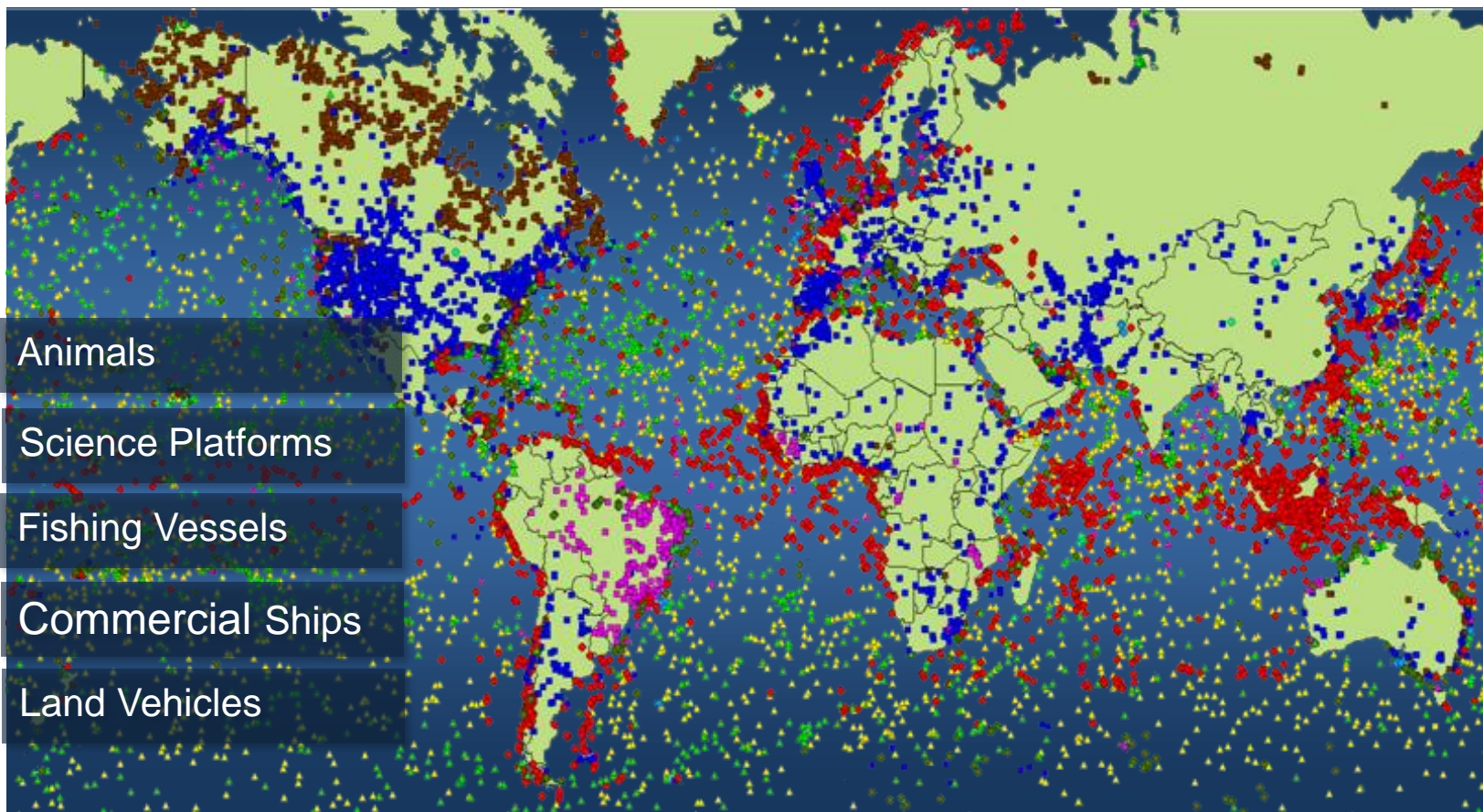


ARGOS & IRIDIUM Satellite Communications

CLS-TRACKED PLATFORMS OVERVIEW

MAP

Currently, more than **100 000 platforms** are tracked by CLS



OCEAN SCIENCE PLATFORMS TRACKED AT CLS

5000+ Ocean Platforms



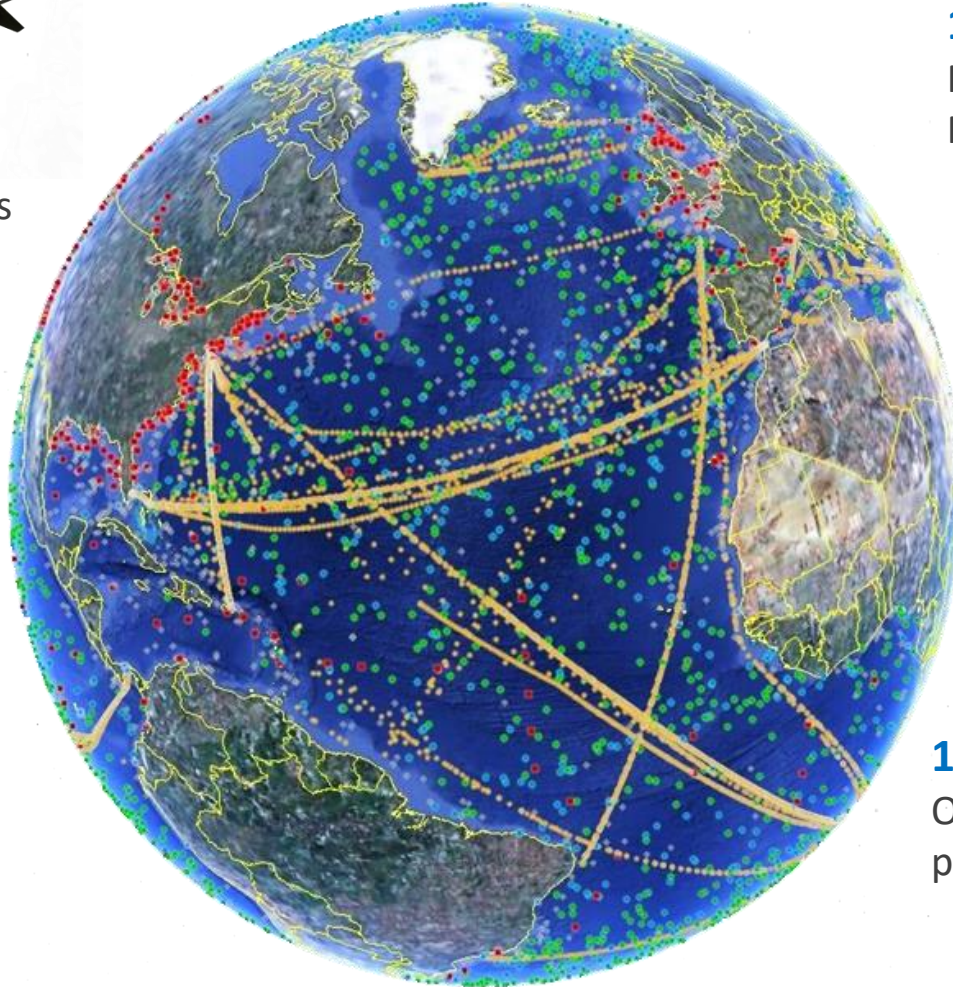
200
Gliders



2700
Profiling
Floats



1200
Drifting
Buoys



1000
Met. / Ocean
Moored Buoys



100
Ice Buoys

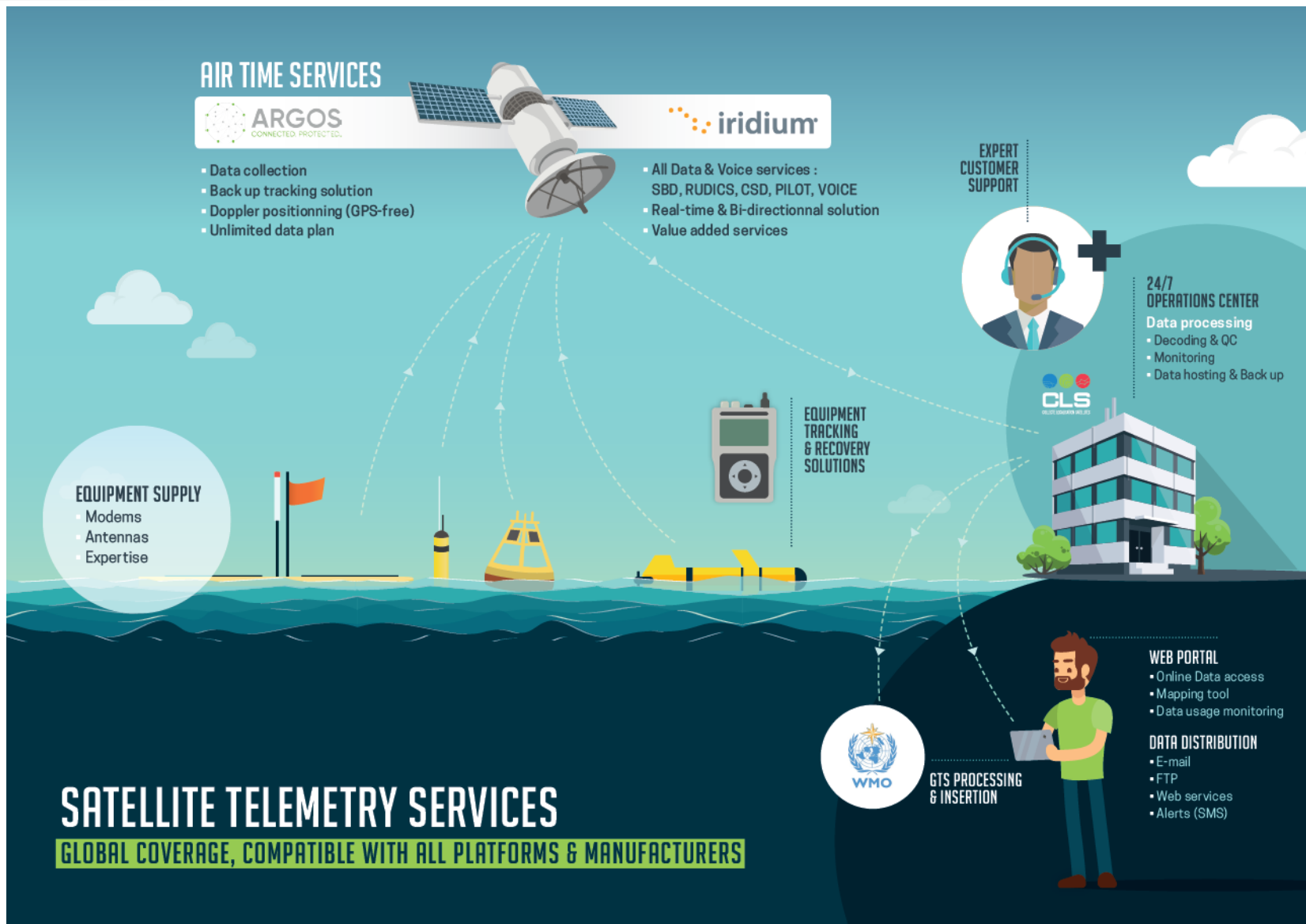


100+
Other
platforms

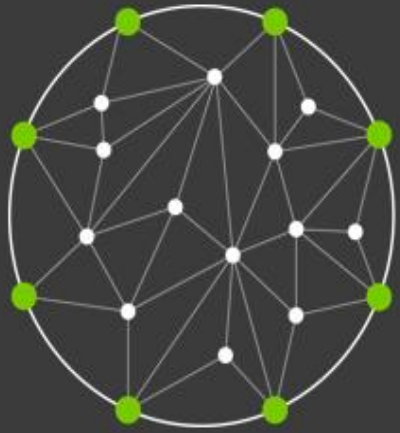


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TELEMETRY SERVICES FOR OCEAN & MET PLATFORMS : OVERVIEW



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ARGOS

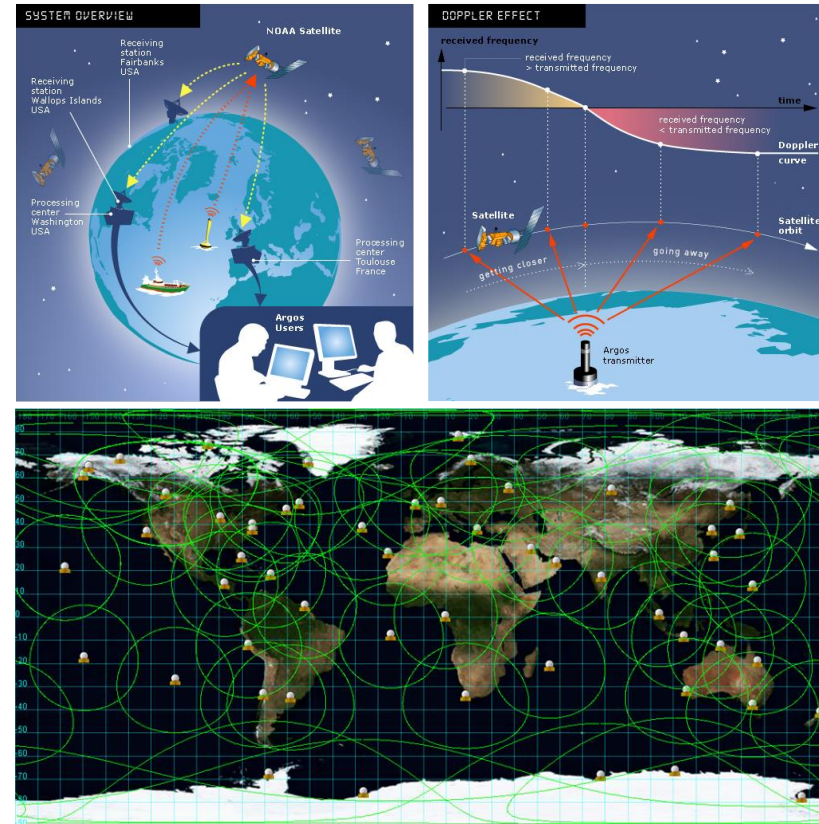
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“Argos is a global, non profit satellite-based data collection and positioning system, dedicated to studying and protecting the earth’s environment.”

Argos is operated by KINEIS (CLS’ subsidiary) , and governed though a partnership between NOAA, NASA, CNES, ISRO and EUMETSAT.

ARGOS, THE CURRENT SYSTEM

- ✓ **Currently 8 operational satellites :**
 - *From 3 Kbytes to 5 Kbytes of data can be transmitted through Argos every day
- ✓ **GLOBAL** coverage system:
 - *Global Coverage thanks to polar orbits (LEO)
 - *7 Global & 65 Regional real-time stations
- ✓ **Low transmission power :**
 - *<1W (long lifetime autonomy)
- ✓ Satellite Pass Duration: up to ~10-12 min
- ✓ **DOPPLER Positioning**
 - ***GPS free** positioning system
 - *Accuracy up to **250 m**
 - *For more accuracy GPS could be added



THE FUTURE OF ARGOS



The answer: Kinéis, IoT Everywhere



25

NANOSATELLITES
PROPULSION INTÉGRÉE



20

STATIONS SOL



3

PARTENAIRES
STRATÉGIQUES



ThalesAlenia
Space



2023

SYSTÈME OPERATIONNEL

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ARGOS 2023 - A system with multiplied capacities



TOTAL CONTINUITY OF SERVICE WITH THE ARGOS SYSTEM

-
Total compatibility between Argos generations



DECREASING REVISIT TIME

-
10 to 15 minutes in average
-
Less than 20 minutes everywhere



CAPACITY TO TRANSMIT MORE DATA

-
More satellite passes
-
More possibilities to send data in high data rate



TWO WAYS GUARANTEED

-
A constellation fully equipped to communicate with transmitters

New Kinéis/ARGOS Hardware available !

>> Small, cheap, and highly capable



R2 Chipset (= RF core)

- current price (R2) : 39€
- 2023 price (mass production of R3) < 10€



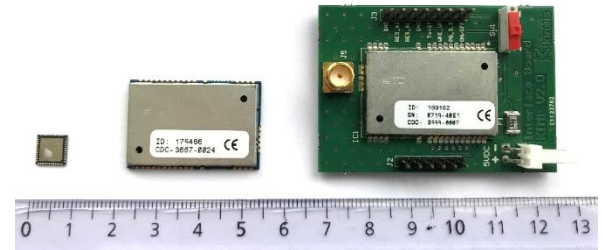
Modules (= modem with integrated chipset)

- current price (KIM-1) : 49€
- 2023 price (mass production of KIM-3) < 15€



Interface dev. Boards : board for KIM modules with connectors

- current price : 290€
- 2023 price (mass production) < 200€



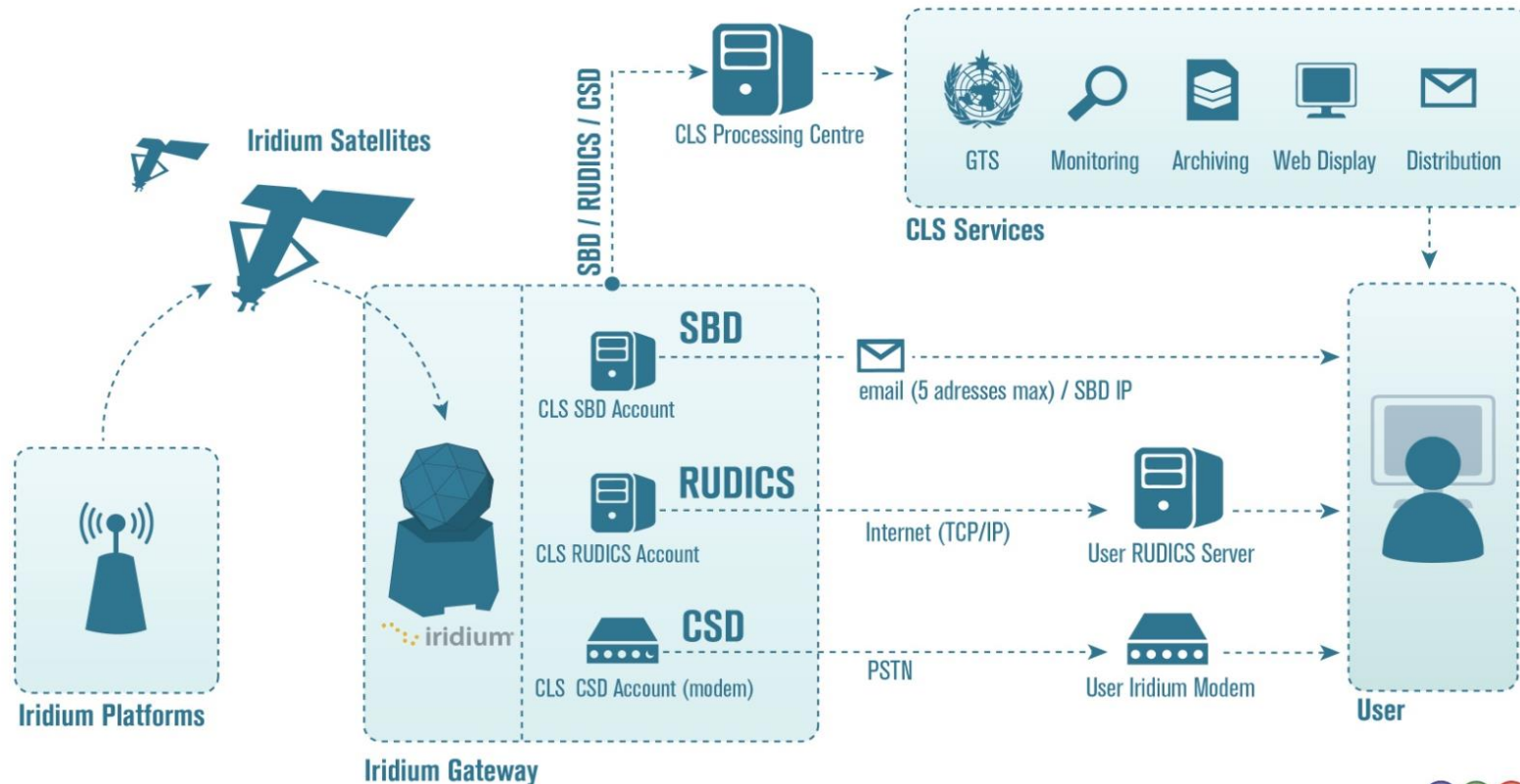
THE IRIDIUM SYSTEM



iridium[®]
Everywhere

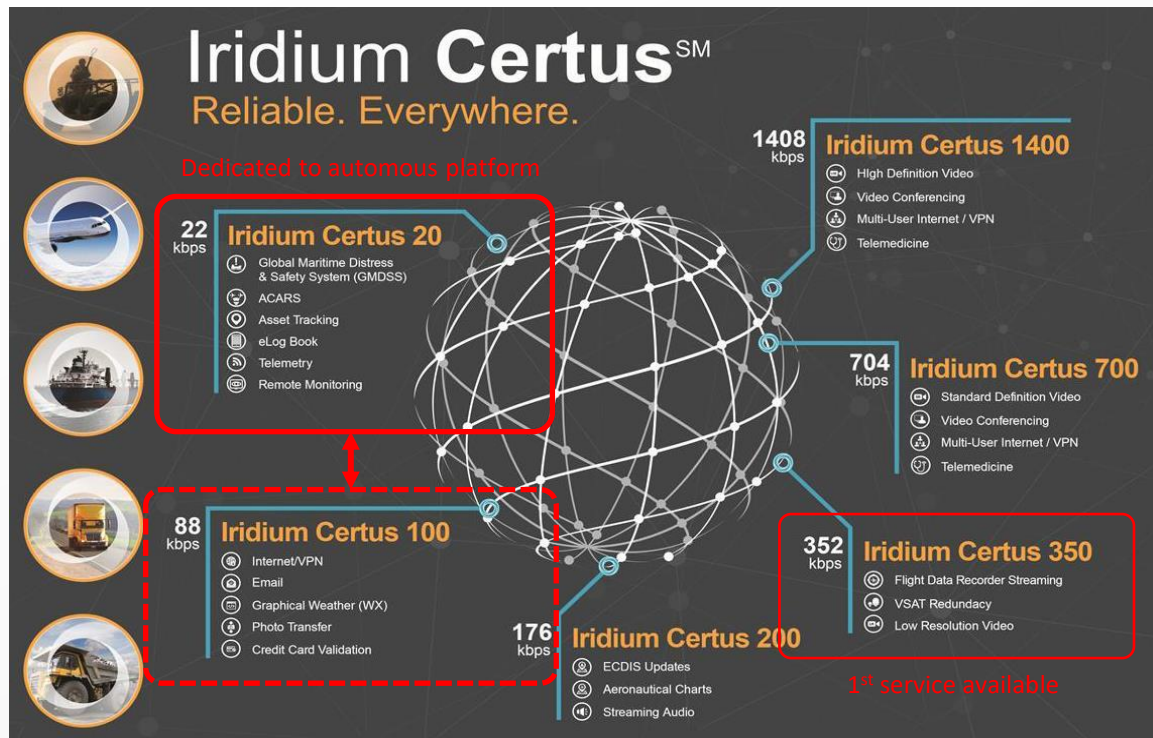
THE IRIDIUM SERVICES FOR OCEAN PLATFORMS

Out of the 7 Iridium data communication solutions, **only 3** are relevant to ocean platforms : **SBD, RUDICS and CSD**





IRIDIUM CERTUS



› Full compatibility with existing services and terminals : SBD, CSD/RUDICS, Pilot and Voice improved (HD quality).

Questions?

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