Airbus DS Intelligence újdonságok

GISOpen 2017 konferencia, Székesfehérvár

Domokos György
Airbus DS Geo Hungary Kft.

DEFENCE AND SPACE

AIRBUS

Intelligence positioning

1800 Employees

21 offices in 12 countries, Intelligence serves customers in more than 100 countries

Multiple Sources

7 Earth Observation satellites, 2 radar and 5 optical, alongside expertise to access different types of information sources

Strong Portfolio

Solutions that combine: Imagery, Services, Systems, Support - underpinned by innovation

We

DEFINE, COLLECT ANALYSE & INFORM

so that our **Customers** *can make*

ACCURATE DECISIONS

AIRBUS effect

Corporate investment in people and research, complemented by access to a larger portfolio: Aircraft, Satellites, Helicopters, UAV's

Data to Information

Processing & Analytics tools and systems to produce relevant and timely information across Intelligence mission scope

Customer Reach

Tri-Market Customer base across multiple market sectors facilitating cross learning and synergies

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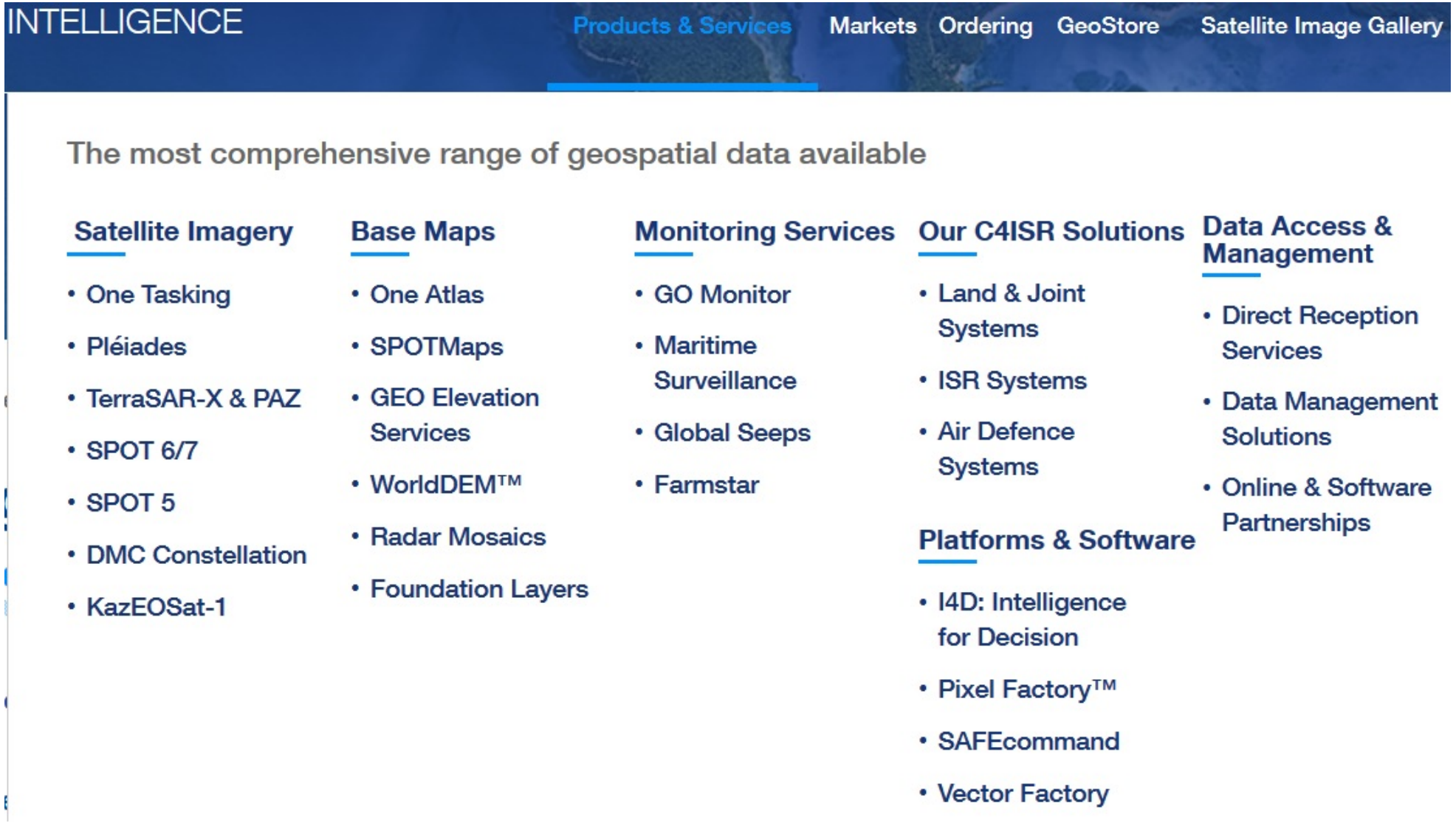
Termékek és szolgáltatások (www.intelligence-airbusds.com/en)



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Processing options

Geometric Processing

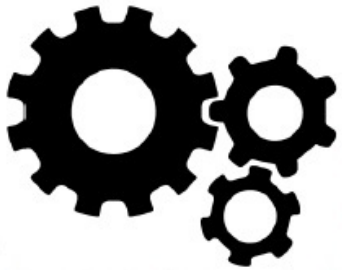
Primary
Ortho

Primary
Projected
Ortho

Radiometric Processing

Basic
+OVR

Basic
Reflectance
Display



Processing options

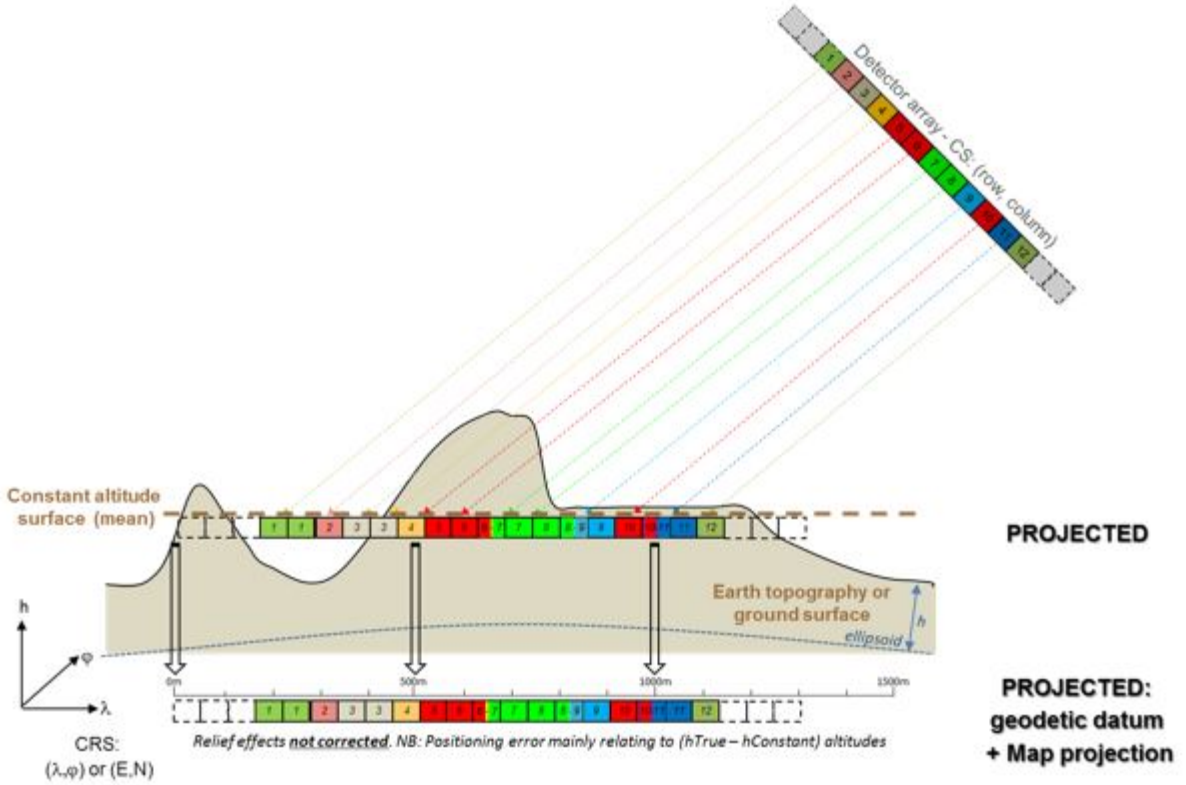
Geometric Processing

Primary
Projected
Ortho

Radiometric Processing

Basic
Reflectance
Display

Új, javított minőségű képi termékek Pléiades és SPOT 6/7 felvételekhez



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Projected

The image acquired in the plan of the sensor is projected on a cartographic or geographic terrestrial plan.

The plan is defined with a constant altitude, which is the mean height value of the area of interest.

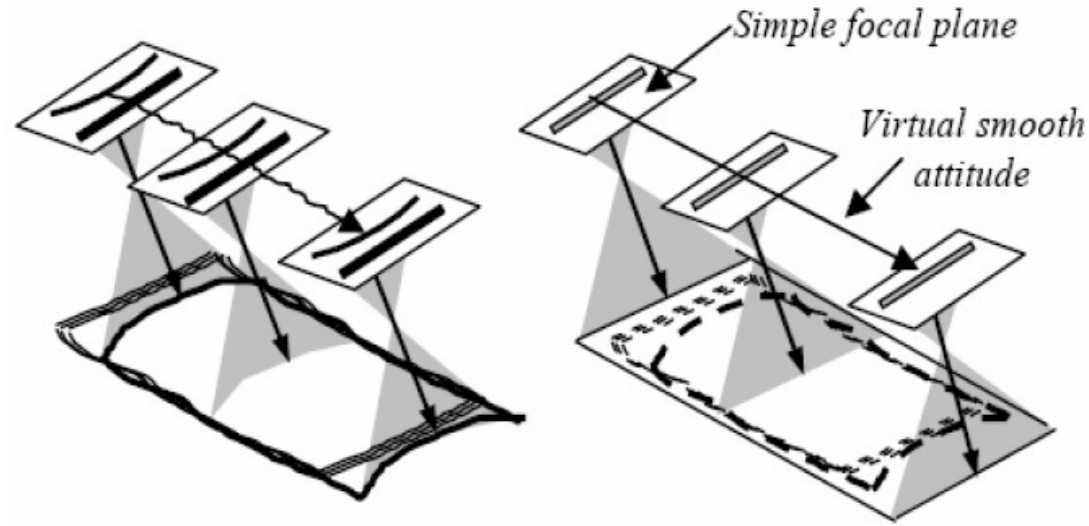
The Projected image has the same geometric quality than Primary.

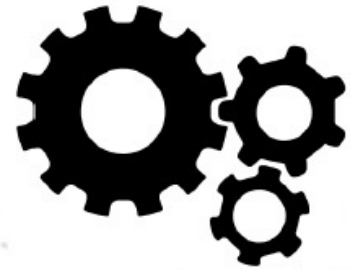
Projected option is compatible with any Spectral Combination or Radiometric Processing.

Main benefits for users:

Directly compatible with GIS environment

Allow easier Orthorectification by users who use their own reference layers (Ortho, GCPs and DEM…) thanks to geometric model described in RPC file embedded





Processing options

Geometric Processing

Primary
Projected
Ortho

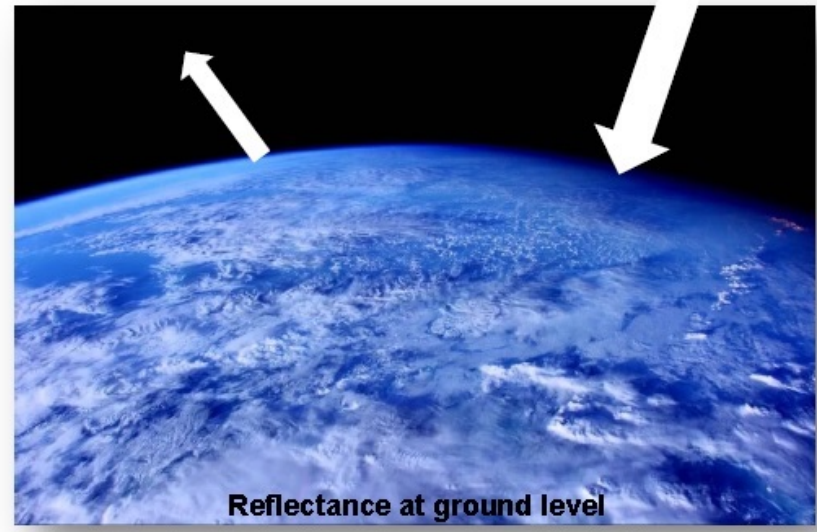
Radiometric Processing

Basic
Reflectance
Display

Reflectance

Image radiometrically corrected from sensor calibration and systematic effects of the atmosphere (molecular or 'Rayleigh' diffusion)

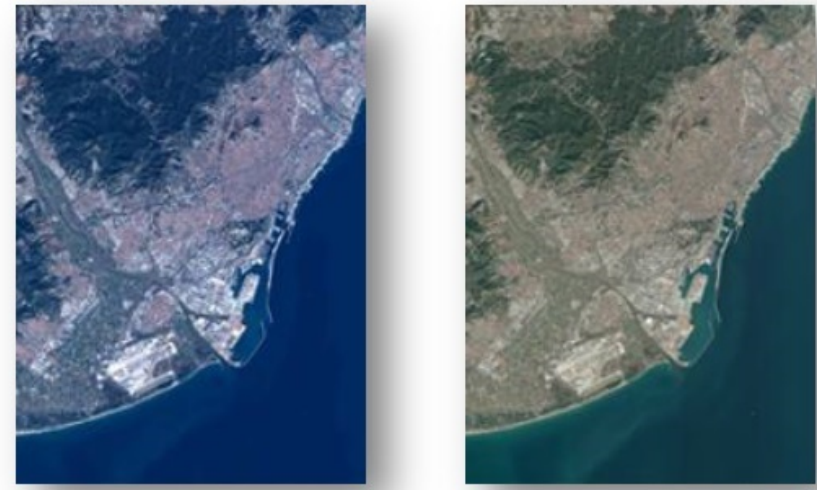
Image values are provided in normalized reflectance values.



except where cloud, cloud veil, haze, aerosol (pollution, sand wind)…

Main benefits for users:

- Correct the bluish effects from atmosphere
- Get reliable true colors
- Ensure better stability of luminosity/contrast on screen
- Prepare direct near seamless coverages (eg. Mosaicking…)



Basic Reflectance

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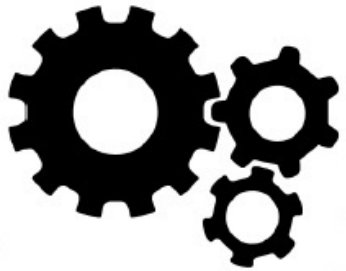

Processing options

Geometric Processing

Primary
Projected
Ortho

Radiometric Processing

Basic
Reflectance
Display

Display

Definition

Display level products are generated based on a new algorithm based on the Reflectance product.
Display is the new version of the OVR processing.

Main benefits for users

Display processing is to be used when imagery needs to be immediately usable with optimized visual rendering.

Optimized for display on screens (8bits)

8-bit pixel coding should be used.
Technical information will be shared to users of the OVR option.

Correct the bluish effects from atmosphere
Barcelona: Pléiades 1A (2015/05/09): OVR
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Correct the bluish effects from atmosphere
Barcelona: Pléiades 1A (2015/05/09): Display
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Get reliable true colors
Barcelona: Pléiades 1A (2015/05/09): OVR
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Get reliable true colors
Barcelona: Pléiades 1A (2015/05/09): Display
AIRBUS

Ensure better stability of luminosity/contrast on screen
Barcelona: Pléiades 1A (2015/05/09): OVR
AIRBUS

Ensure better stability of luminosity/contrast on screen
Barcelona: Pléiades 1A (2015/05/09): Display
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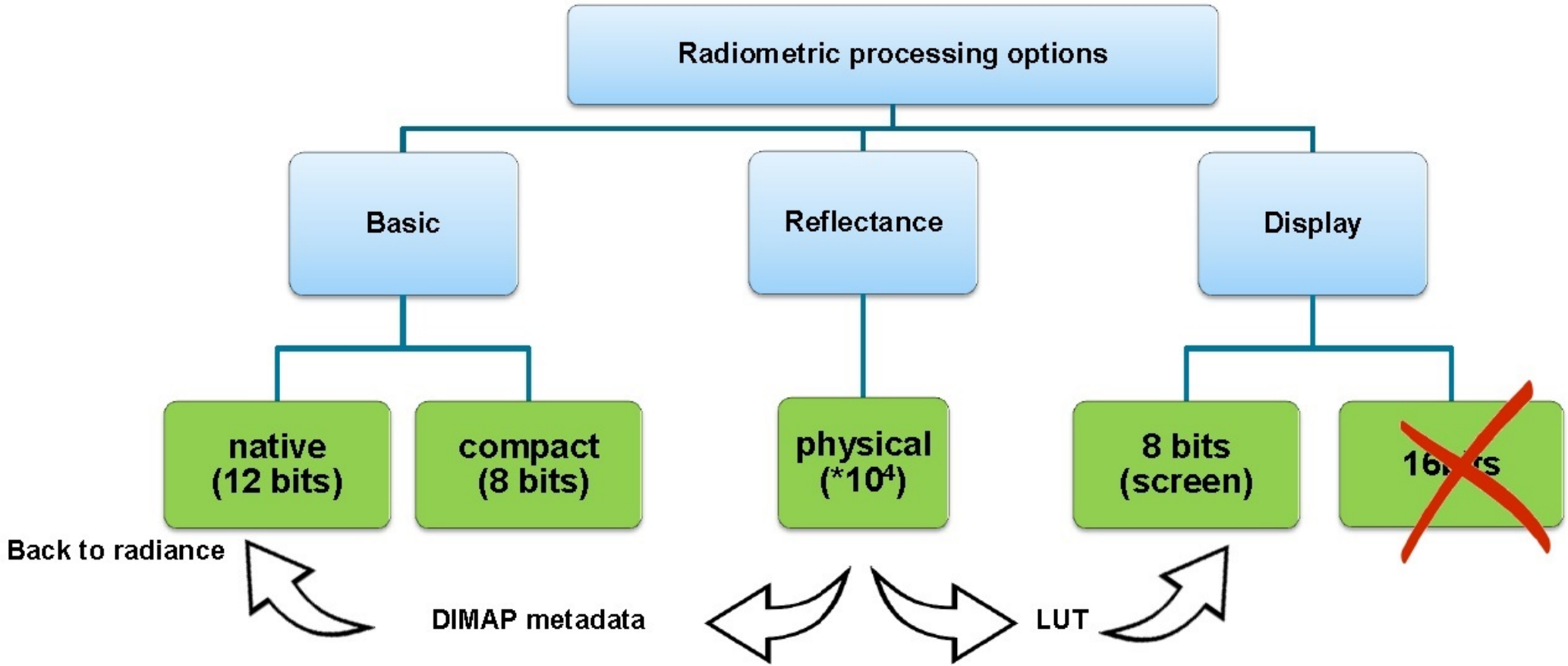


To be managed shortly through main image processing software

One Atlas

Current, consistent, accurate

Professional grade

Selected by Airbus

Off-the-shelf archive imagery

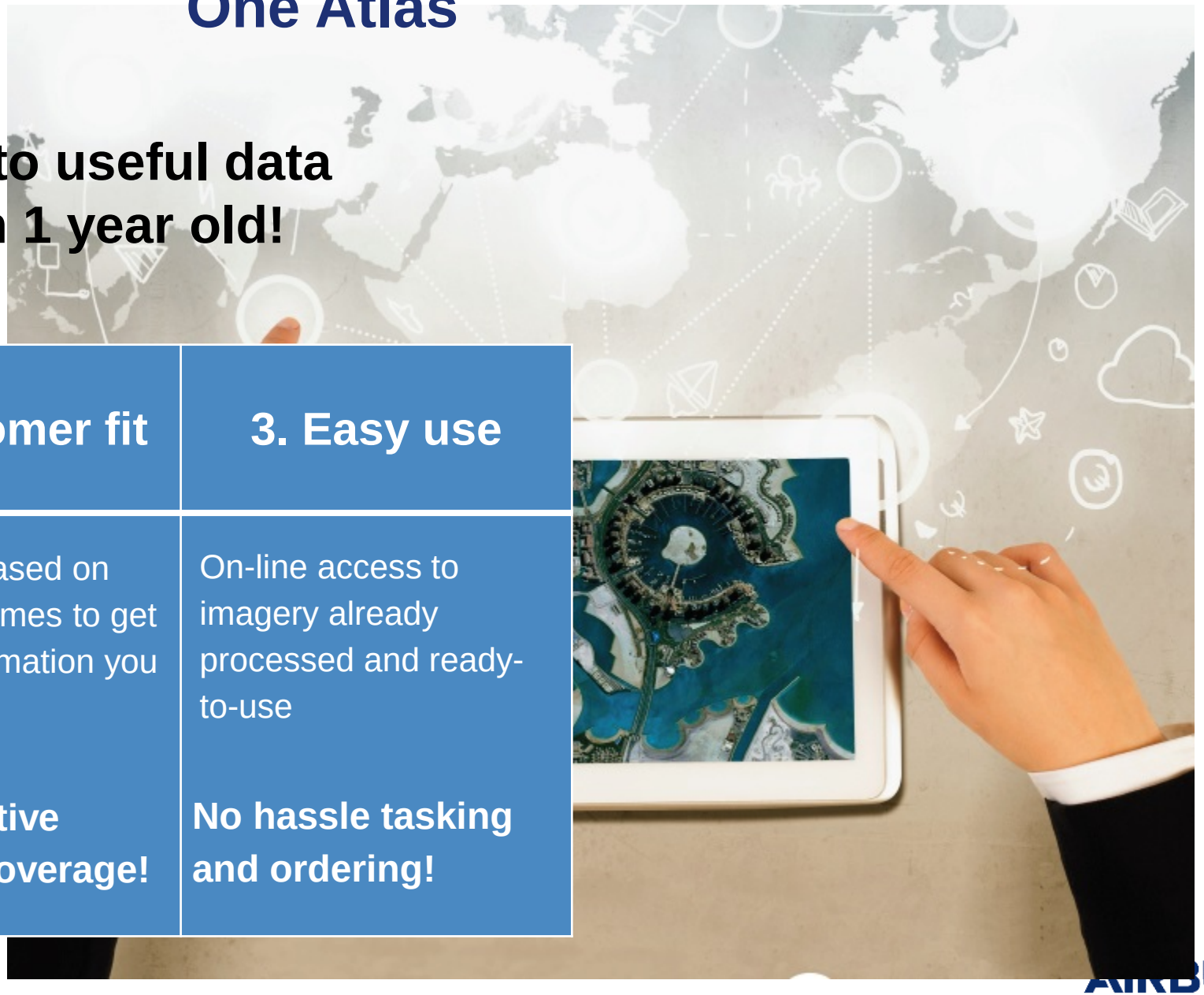
Hosted on the cloud

Online Basemap

One Atlas

Easy access 24/7 to useful data always less than 1 year old!

1. Fresh data	2. Customer fit	3. Easy use
Imagery as fresh as 1 day, and never older than 1 year **The latest info when you need it!**	4 services based on your time-frames to get just the information you need **Cost-effective offers of coverage!**	On-line access to imagery already processed and ready-to-use **No hassle tasking and ordering!**

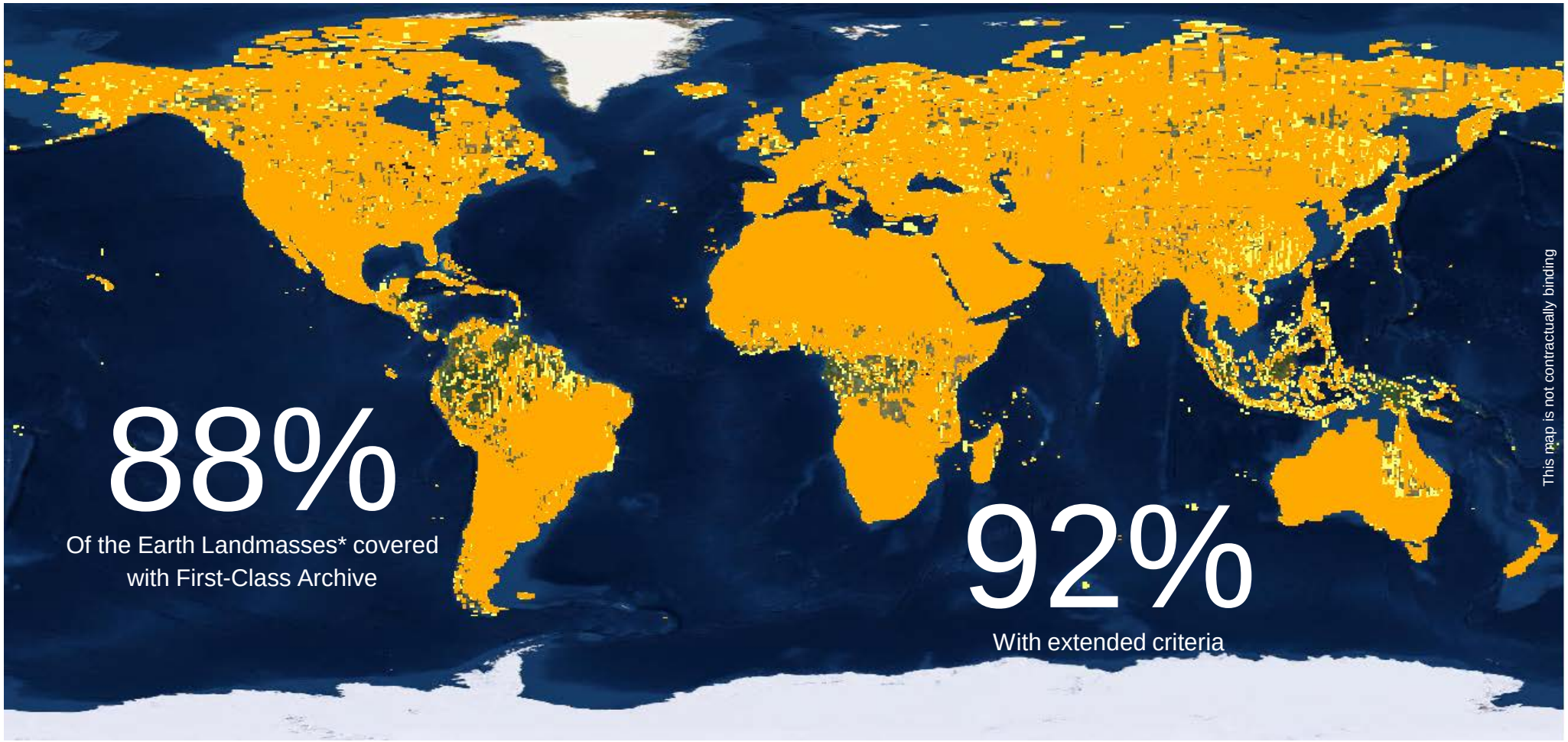


The World

Every Year at 1.5m

Fresher-Than-A-Year Archive

Status: 2016, Sept. 29



SPOT Archive: 20° angle, 5% cc

SPOT Archive: 30° angle, 15% cc

* Polar areas excluded

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Access!

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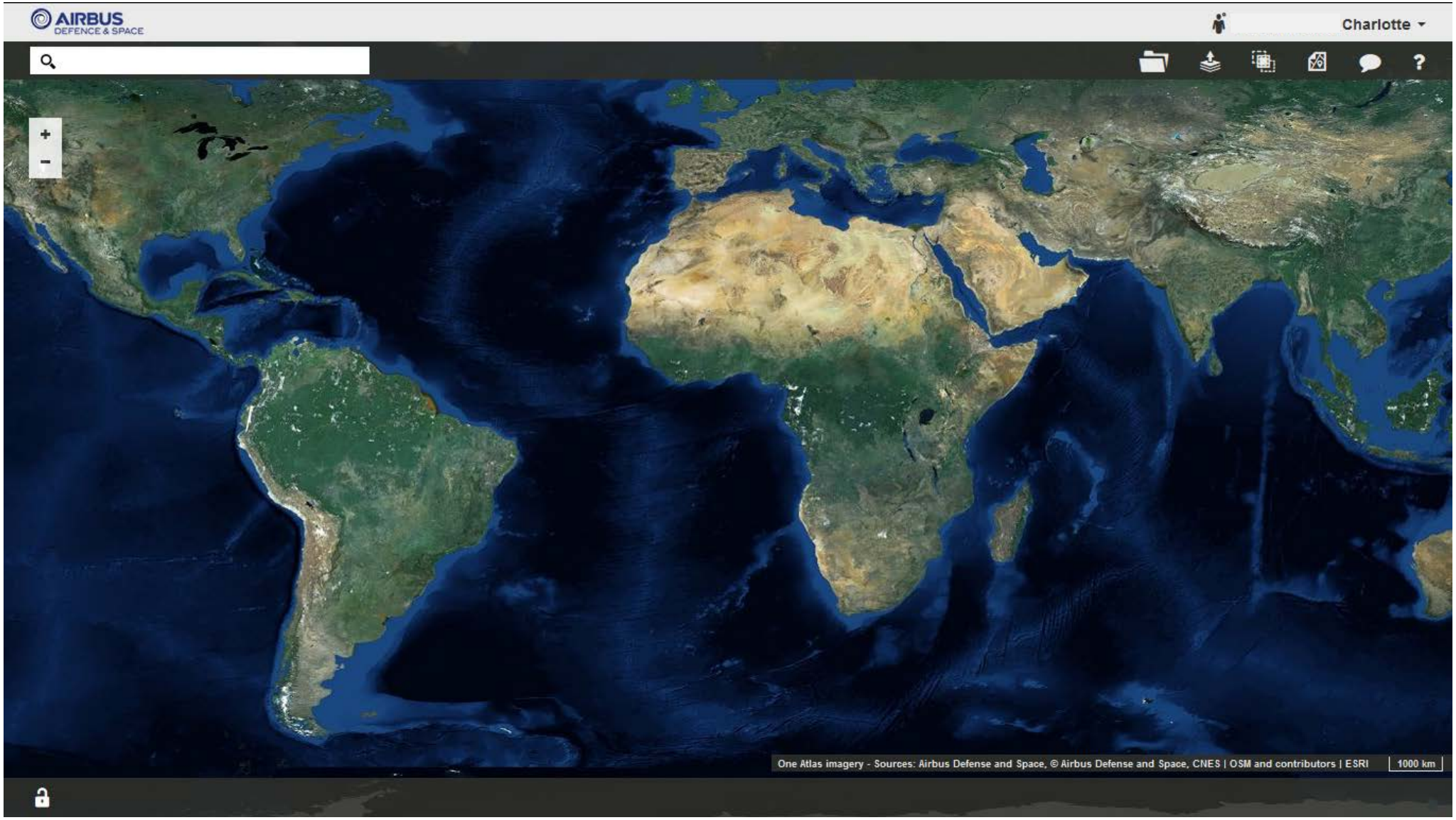
AIRBUS
DEFENCE & SPACE
Charlotte
One Atlas imagery - Sources: Airbus Defense and Space, © Airbus Defense and Space, CNES | OSM and contributors | ESRI
1000 km

Easy &
Immediate

Up-to-date &
Consistent

Affordable &
cost-effective

Already Live in One Atlas

Status: 2016, Sept. 29

One Atlas: 0.5m Imagery

One Atlas: 1.5m First Layer

* Polar areas excluded

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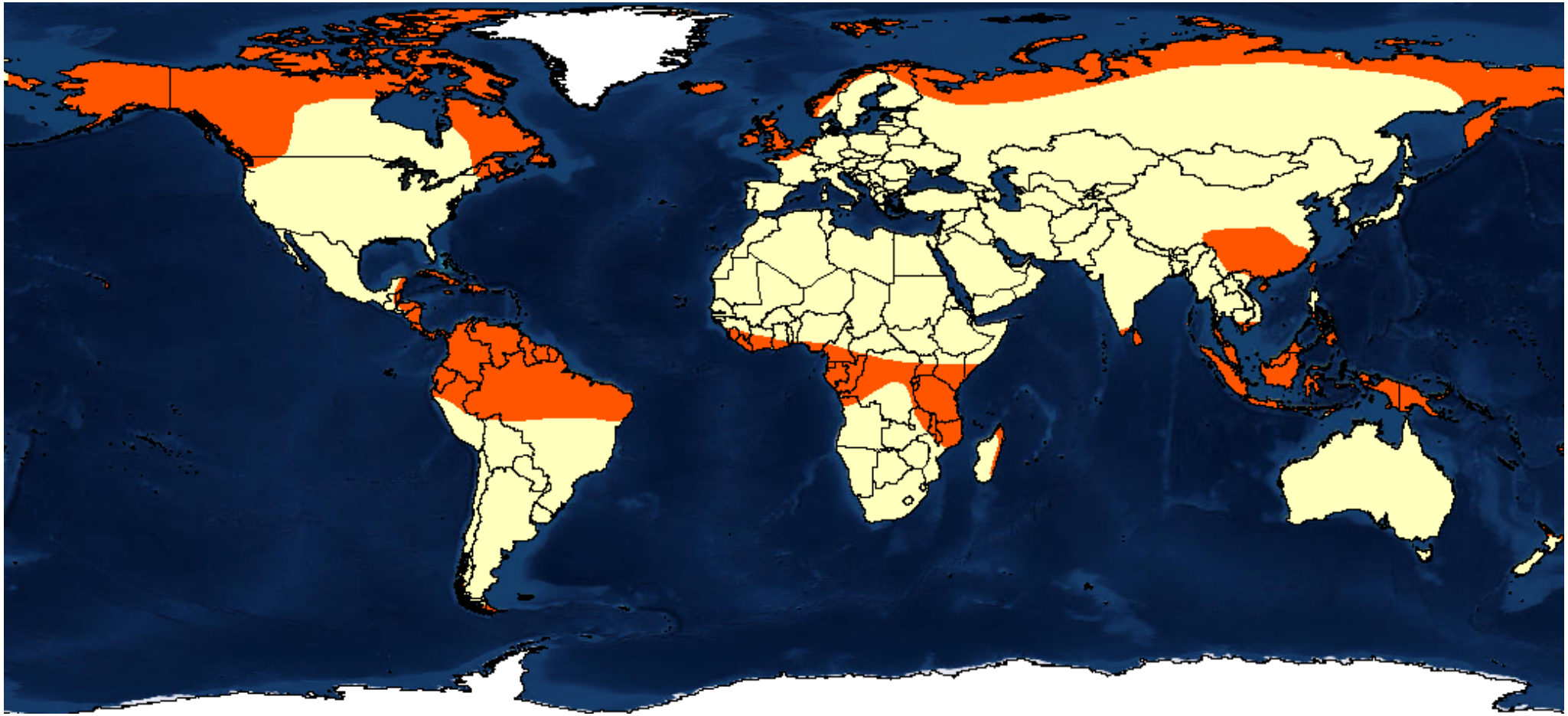
One Atlas Commitment



Up to 20° angle - 5% clouds - Less than a year @ 90% confidence

Up to 30° angle and/or up to 25% clouds and/or older than a year @ 75% confidence

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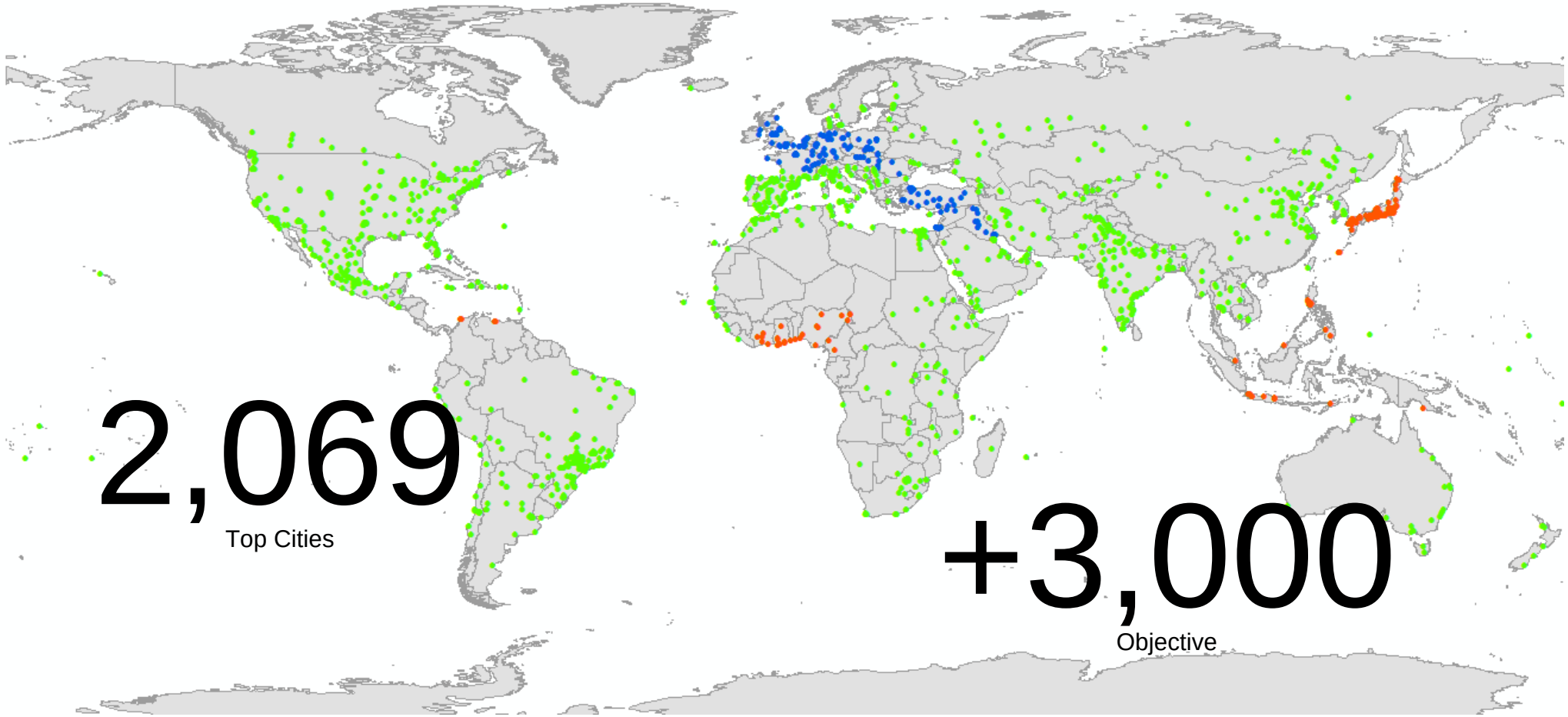
One Atlas Cities Commitment



0.5m Imagery – refresh every year

0.5m Imagery – refresh every year (best effort)

0.5m Imagery – refresh every two years

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Typical Uses Cases

Defense and Security

- Plan missions and operations
- Map, report and update positions, movements, risk areas
- Select transportation routes and access points

Civil Engineering

- Perform preparatory studies for infrastructure planning
- Define and adjust early routing
- Visualize, share and communicate infrastructure impacts

Forest, Environment

- Assess forest and non-forest area extent
- Identify tree cover change or de/reforestation
- Organize tree count or replanting

Oil, Gas and Mining

- Prepare ground scouting / exploration in the field
- Plan / implement a new facility
- Check environmental site restoration after exploitation

Agriculture

- Delineate parcel boundaries
- Map agricultural lands and crop species
- Track and trace tractors and irrigation assets

Location Based Services

- Widen and refresh imagery database
- Detect quickly where map updates are required
- Locate mobile assets, track and trace them

2 Options

ONE VIEW

Cost-effective and
consistent snapshot

ONE LIVE

Top quality,
never ageing basemap

Core Product Options

	ONE VIEW	ONE LIVE
Image selection	Handpicked images, driven by cloud minimization and seasonality consistency	
Content refresh	None	Dynamic, as per refresh commitment. Faster refresh option* upon feasibility

*Submitted to uplift

Core Product Options

	ONE VIEW	ONE LIVE
Image selection	Handpicked images, driven by cloud minimization and seasonality consistency	
Content refresh	None	Dynamic, as per refresh commitment. Faster refresh option* upon feasibility
Editor[1]	Disabled	Enabled

(1) Tool enabling to change the order in which the images are displayed - - *Submitted to uplift

Core Product Options

	ONE VIEW	ONE LIVE
Image selection	Handpicked images, driven by cloud minimization and seasonality consistency	
Content refresh	None	Dynamic, as per refresh commitment. Faster refresh option* upon feasibility
Editor[1]	Disabled	Enabled
Vintage option[2*]	Yes, previous OneView layers	Yes, OneLive imagery with a starting date defined by the user

(1) Tool enabling to change the order in which the images are displayed - - (2) Coming soon - - *submitted to uplift

3 Licenses

Internal

For those who want imagery to perform their own daily operations

External Non Commercial

For organizations needing to share the data with others to perform their mission

External Commercial

For the ones that target to generate / secure revenues thanks to the dataset

Examples

Internal	External Non Commercial	External Commercial
A big O&G company A Ministry of Defense	A Ministry of Agriculture wishing that farmers digitalize theirs parcels on an online basemap	LBS actors for map update SMEs selling information they extract from the data

3 Delivery Options

Streaming	Digital Copy Tiles	Digital Copy Segments
WMS, WMTS, WFS <1s for one TMS tile (256x256 px.)	Global Ortho Layer Tiles (256 x 256 px, mixed PNG and JPEG)	Individual Orthoimages JPEG 2000 Optimized

Delivery Options

	Streaming	Digital Copy[1]	
		Tiles	Imagery Segments
Spectral bands	RGB	RGB	RGB & NIR

(1) The digital copy option must be selected ab initio, in the initial order form.

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Delivery Options

	Streaming	Digital Copy[1]	
		Tiles	Imagery Segments
Spectral bands	RGB	RGB	RGB & NIR
Pixel depth	8 bits	8 bits	8 bits

(1) The digital copy option must be selected ab initio, in the initial order form.

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Delivery Options

	Streaming	Digital Copy[1]	
		Tiles	Imagery Segments
Spectral bands	RGB	RGB	RGB & NIR
Pixel depth	8 bits	8 bits	8 bits
Geometric processing	Global ortho layer Geographic (WGS 84) Web Mercator	Global ortho layer tiles Geographic (WGS 84) or Web Mercator	Individual orthoimages Geographic (WGS 84)

(1) The digital copy option must be selected ab initio, in the initial order form.

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Delivery Options

	Streaming	Digital Copy[1]	
		Tiles	Imagery Segments
Spectral bands	RGB	RGB	RGB & NIR
Pixel depth	8 bits	8 bits	8 bits
Geometric processing	Global ortho layer Geographic (WGS 84) Web Mercator	Global ortho layer tiles Geographic (WGS 84) or Web Mercator	Individual orthoimages Geographic (WGS 84)
Delivery	• Imagery: WMS, WMTS <1s for one TMS tile (256x256 px) • Metadata: WFS, WMS	Tiles (256 x 256 px, mixed PNG and JPEG) Batch delivery through our cloud platform[2]	JPEG 2000 Optimized Batch delivery through our cloud platform[2]

(1) The digital copy option must be selected ab initio, in the initial order form. - - (2) Frequency to be agreed upon feasibility.

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One Taski

	ONE DAY	ONE NOW	ONE PLAN	ONE SERIES
Timeframe	One day	The smallest period needed to secure three acquisitions – additional acquisitions are proposed until cloud cover rate reaches ≤10%	Customer selected	Customer selected, including frequency
Cloud Cover	≤100%	≤10%. All acquisitions are delivered. A validated acquisition ends the tasking	≤10% or ≤ 5% with uplift 100% for OneSeries Critical – images are invoiced when at least 40% cloud free	
Service Level	Premium[1]	Premium[1]	Regular[2]	Regular[2] Premium[1]
Acquisition Failure Terms	Order cancelled (no charge) + 25% voucher	If an acquisition is missing amongst the three firsts in the agreed window, the other acquisitions are delivered at no charge	10% voucher	OneSeries Routine: 10% voucher OneSeries Critical: 25% voucher

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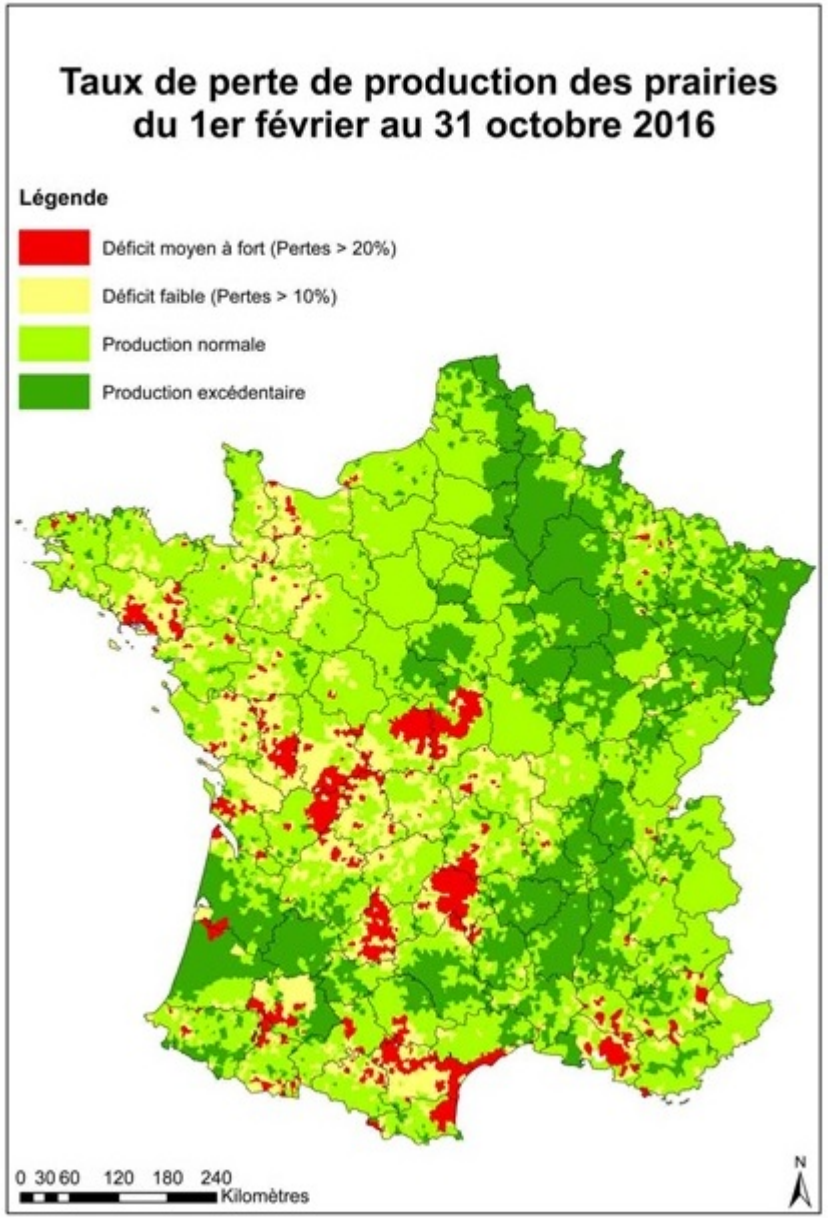
	ONE DAY	ONE NOW	ONE PLAN	ONE SERIES
Timeframe	1 day	The smallest period needed to secure three acquisitions – additional acquisitions are made until cloud cover rate reaches 10% or the customer decides to end the tasking	Customer selected	Customer selected, including frequency
Cloud Cover	≤100%	≤10%. All acquisitions are delivered. A validated acquisition ends the tasking	• ≤10% or ≤ 5% with uplift • Possibility to select three small cloud-free AOIs (Pléiades 1x1 km, SPOT 3x3 km) • 100% for OneSeries Critical – images are invoiced when reaching at least 40% cloud free	
Min AOI	Pléiades: 100 km² SPOT: 500 km²	Pléiades: 100 km² SPOT: 500 km²	Pléiades: 100 km² SPOT: 500 km²	Pléiades: 100 km² – 50 km² if five revisits or more SPOT: 500 km² – 250 km² if five revisits or more
Max AOI	Pléiades: 20 km EW x 40 km NS SPOT: 60 km EW x 120 km NS Bigger areas are submitted to feasibility study		Submitted to feasibility study	
Acquisition	Mono			Mono

Legelő monitoring

Takarmánytermés index,
sikeres piaci bevezetése az állattenyésztők részére
éghajlati kockázatok elleni biztosítás
10 naponként készített űrfelvételek alapján a teljes vegetációs időszakban.
Történeti adatsorok és felvételek alapján ellenőrizve és hitelesítve 2003-ig visszamenőleg

1,400 szerződés, 107,000 hektáron
Francia gazdák és mezőgazdasági biztosítók között az első évben.

www.intelligence-airbusds.com/en/7728-airbus-fodder-production-index-with-good-market-insurance-against-climate-risks



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1

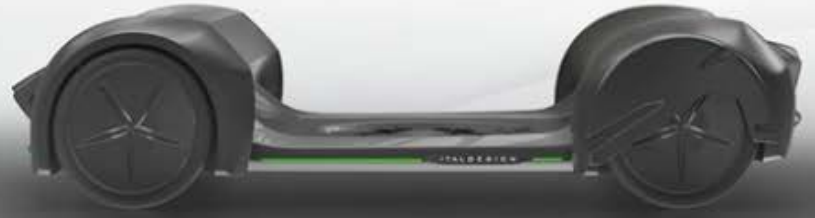
Air module
5 by 4.4 metres; propelled by eight counter-rotating rotors

2

Carbon fibre passenger capsule
2.6 metres long, 1.4 metres high, 1.5 metres wide

3

Ground module
Battery powered; carbon fibre chassis



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Köszönöm a figyelmet!

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Intelligence Portfolio vs Intelligence Cycle

Planning & Direction

IMAGERY
GeoStore
ONE Tasking

SYSTEMS
Fortion® Workflow
I4D-based Midstream Facility

CUSTOMER SUPPORT

ONE TASKING

ONE DAY — Choose your acquisition day

ONE NOW — Access useful information in an instant

ONE PLAN — Obtain qualified coverage within an agreed timeframe

ONE SERIES — Get coverage on a regular basis

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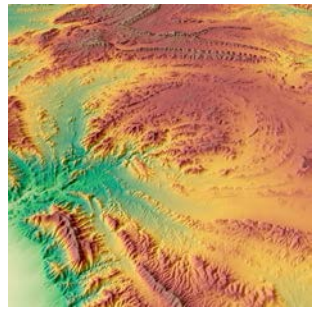
Collection

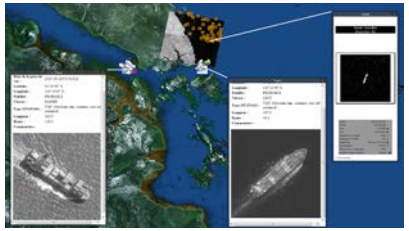
IMAGERY

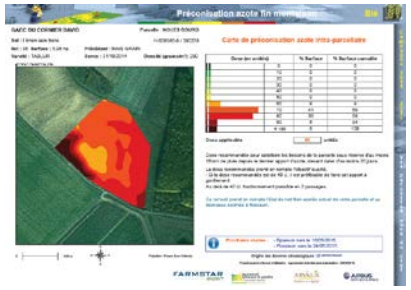
All optical & radar imagery
Elevation product suite
Imagery layers

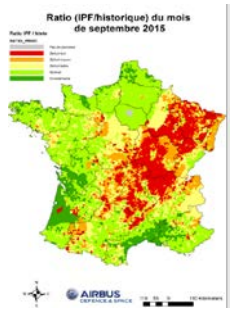


SERVICES

Information products for Defence, Agriculture, Maritime, OGM, Aeronautics, Disaster Management …







SYSTEMS

Ground Segments
Fortion® SuRVin Air
(NATO AWACS)

CUSTOMER SUPPORT

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Processing, exploitation, analysis & production

SYSTEMS

Pixel Factory Neo
Vector Factory
SAFECommand™
Overland
OceanWay
Fortion® Image Analyst
RECCE Engine
IMINT KDB
Fortion® Media Mining
I4D Product Suite
Fortion® SuRVin Air
(NATO AWACS)

CUSTOMER SUPPORT

overland

AIRBUS

Dissemination & Integration

SYSTEMS

I4D Product Suite
I4D-based Midstream Facility
Fortion® DataShare
GetGEO
GATOR
DataDoors

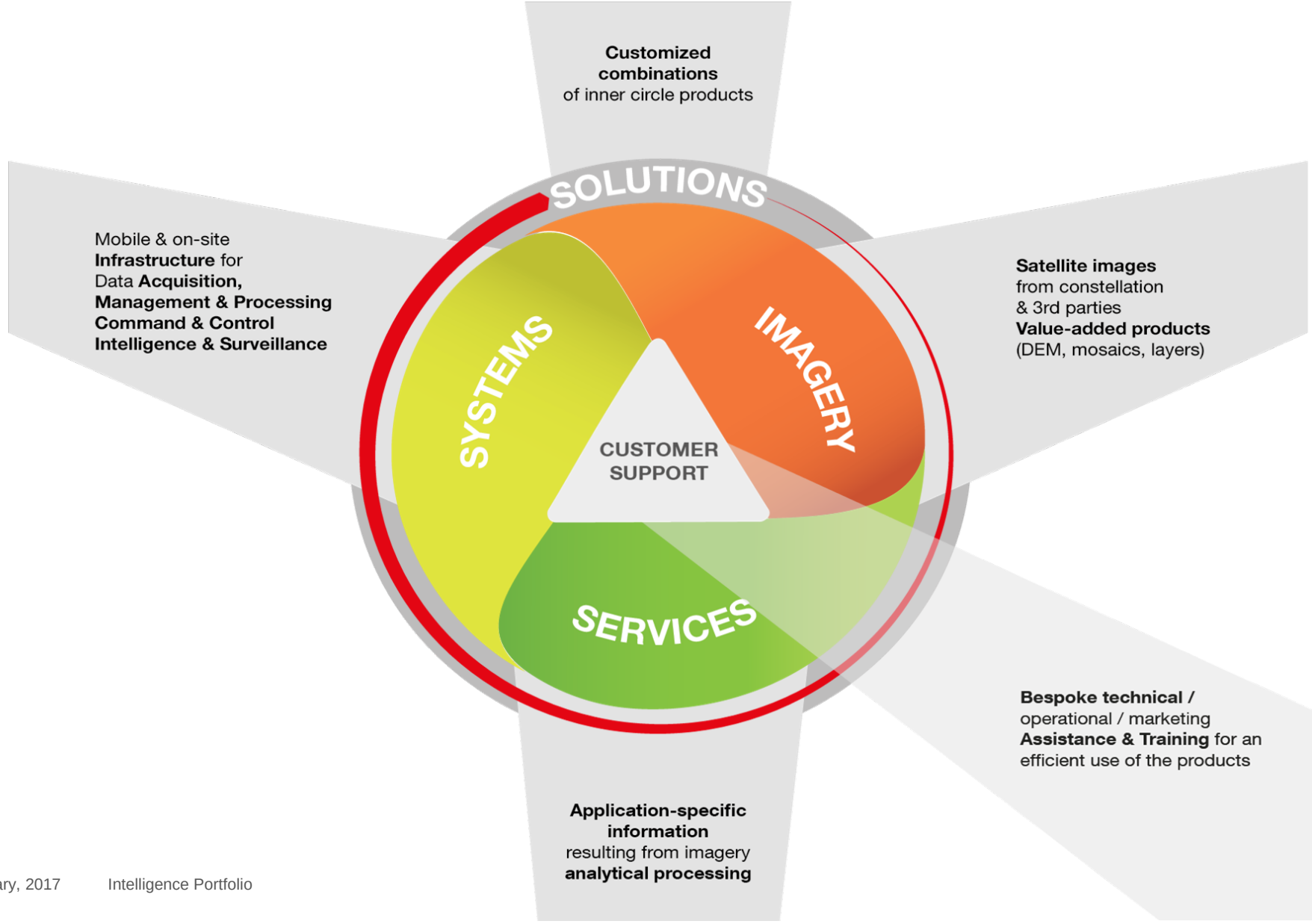
CUSTOMER SUPPORT

Back-up

Intelligence Portfolio overview

Confidential

Intelligence portfolio: 5 product categories



AIRBUS

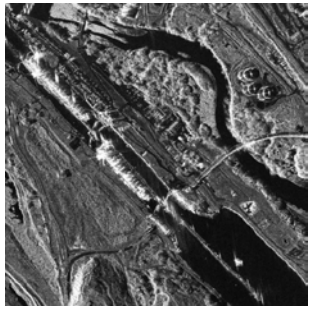
Confidential

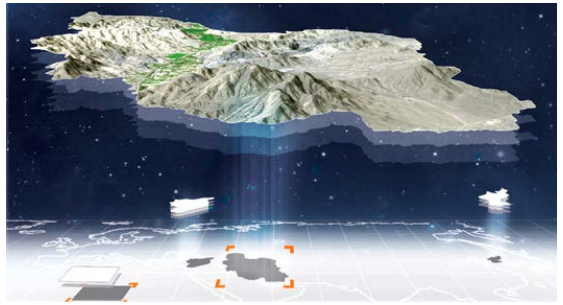
IMAGERY

SATELLITE IMAGERY

Optical & radar

Pleiades, SPOT, TerraSAR-X, VHR 2020
DMC, KazEOSat-1, Triplesat
ONE Tasking, Telemetry



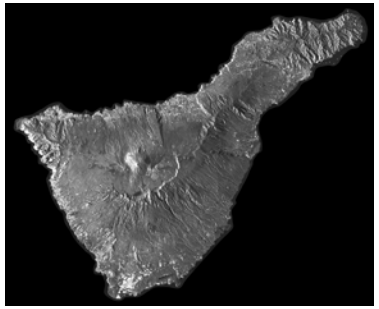


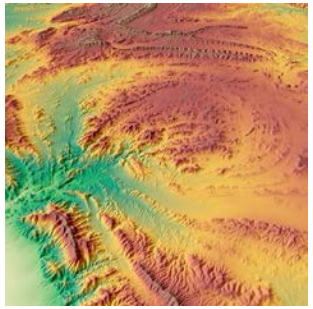
Upcoming: HAPS

IMAGERY LAYERS

Optical & radar-based

***Elevation**: Elevation Product Suite, incl. WorldDEM™*
GCPs
***Layers**: SPOTMaps, ONE Atlas*





ALL DELIVERY & TASKING MODES

FTP, physical media, telemetry, streaming

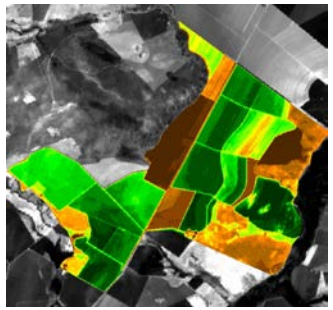
AIRBUS

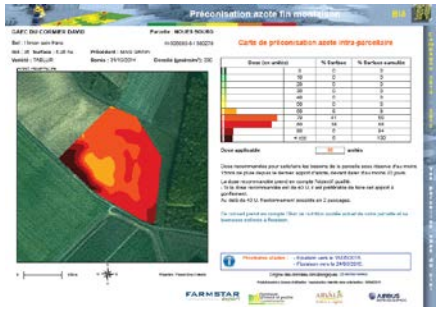
Confidential

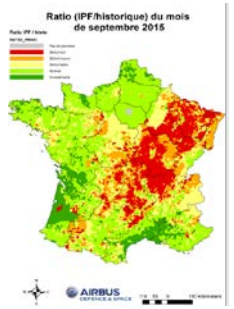
SERVICES

APPLICATION-SPECIFIC PRODUCTS

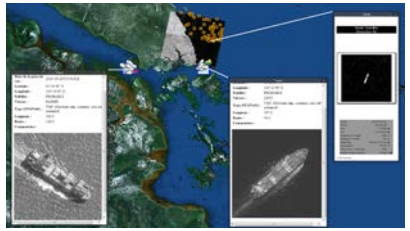
Defence: *GO Monitor, Conflict Atlas*
Agriculture*: Precision Agriculture, Fodder Production Index*
Maritime*: Vessel Report Services*
Oil, Gas & Mining*: Stack Insight, Global Seeps, Geological studies*
Aeronautics*: Aeronautical Mapping Services*
Resilience & Disaster Management *Services*

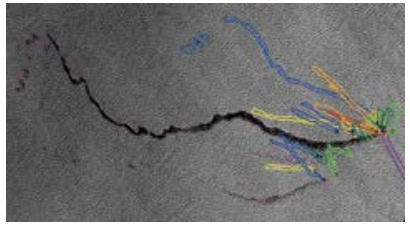


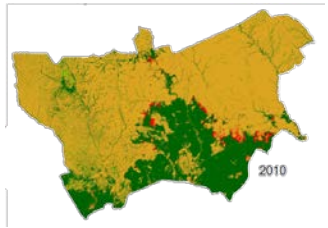




INFORMATION PRODUCTS







ALL DELIVERY MODES

FTP, physical media, streaming

AIRBUS

Confidential

SYSTEMS (focus on Defence ISR, Governmental & Commercial customer needs)

DATA ACQUISITION

Ground Segments

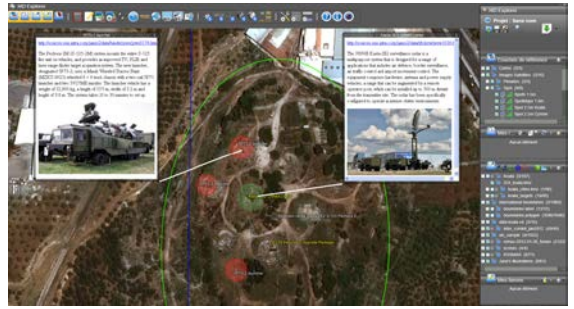
DATA MANAGEMENT

I4D-based Midstream Facility, Fortion® Workflow, Fortion® DataShare, GetGEO, DataDoors, GATOR

ANALYSIS & PROCESSING

SAFECommand™, Pixel Factory Neo, Vector Factory, Overland, OceanWay
Fortion® Image Analyst, RECCE Engine, ImINT KDB, Fortion® Media Mining,
I4D Product Suite

Plus additional systems for **LAND & JOINT** *and* **AIR DEFENCE**



AIRBUS

Confidential

CUSTOMER SUPPORT

CONSULTANCY

Change Detection, Land Administration, Land Cover Mapping, Forest Mapping, Surface Movement Monitoring

CHANNEL DEVELOPMENT

LOGISTICS SUPPORT

CUSTOMER CARE

MAINTENANCE

TRAINING AND COACHING

Training academy

AIRBUS

Confidential

SOLUTIONS (examples) to provide operational autonomy

DIRECT RECEIVING STATIONS

TM, ground segment, midstream facility, training, support & maintenance

MARITIME SURVEILLANCE CENTRES

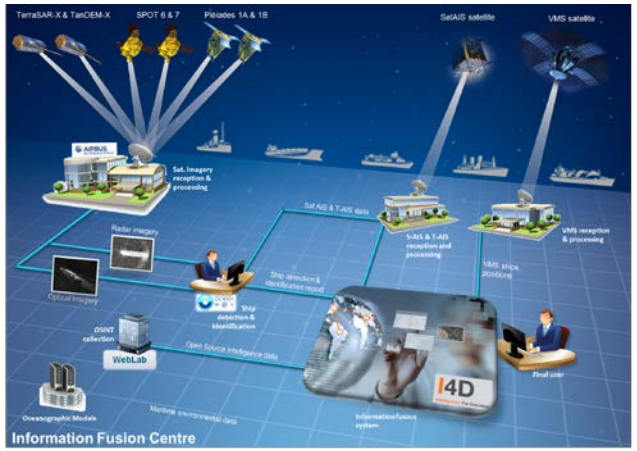
IMAGERY products, Pixel Factory, I4D product suite, Fortion® ISR product suite, OceanWay, training, support & maintenance

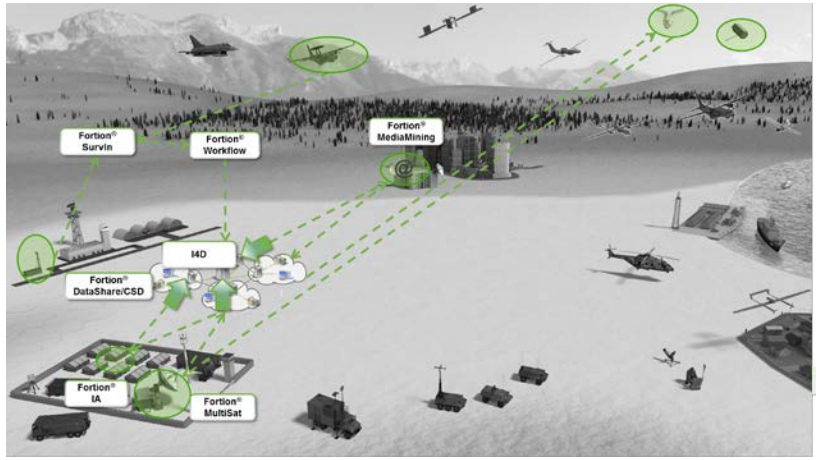
MULTI-INT CENTRES

IMAGERY products, Pixel Factory, I4D product suite, Fortion® ISR product suite, training, support & maintenance

CIVIL APPLICATION CENTRES

IMAGERY products, Pixel Factory, Overland, training, support & maintenance





AIRBUS