

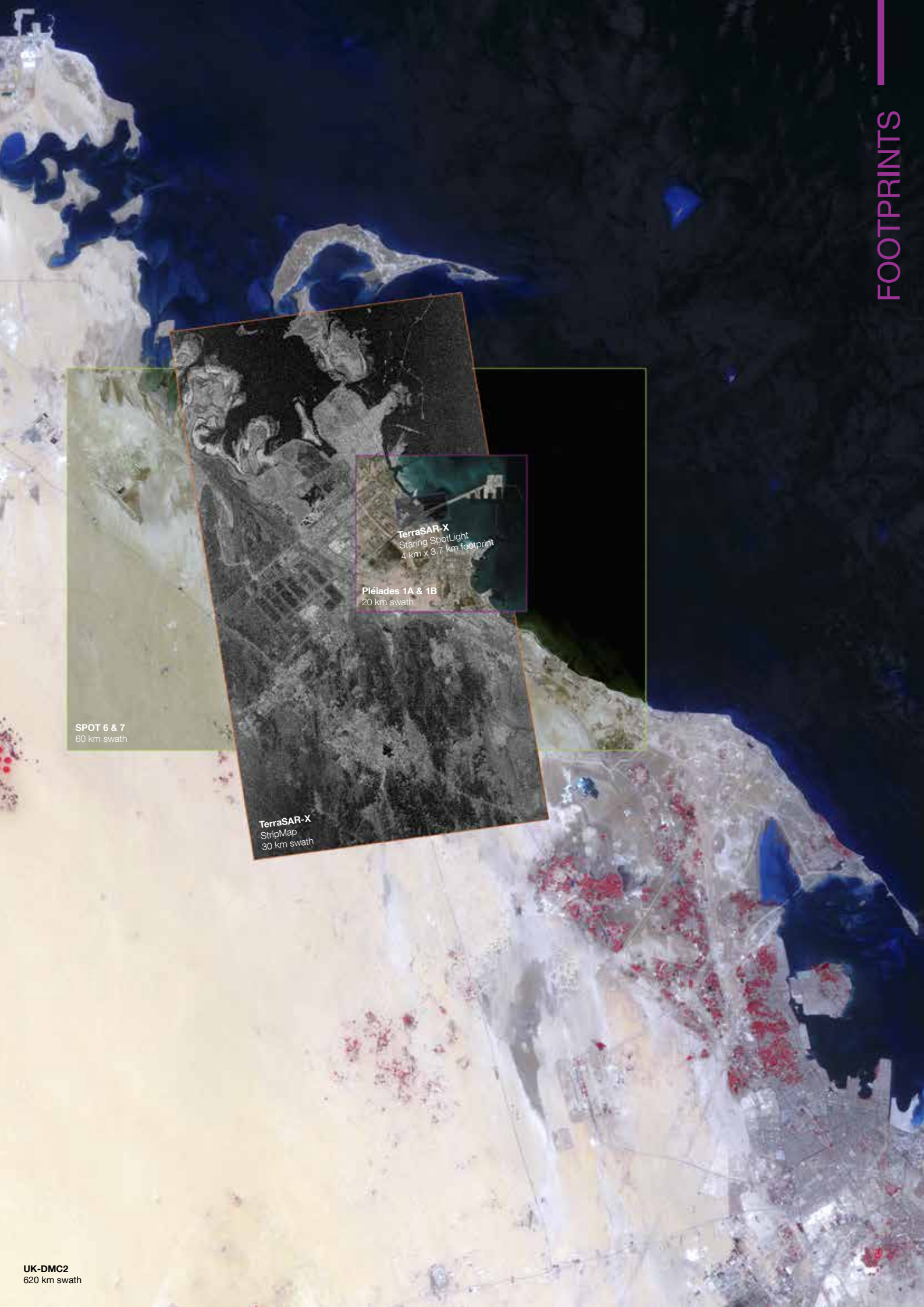
DEFENCE AND SPACE  
Intelligence

# Airbus Defence and Space Constellation

The Imagery  
that Suits You



**AIRBUS**



SPOT 6 & 7  
60 km swath

Pléiades 1A & 1B  
20 km swath

TerraSAR-X  
Staring SpotLight  
4 km x 3.7 km footprint

TerraSAR-X  
StripMap  
30 km swath

UK-DMC2  
620 km swath

# Pléiades

## Timely, Available Very High Resolution

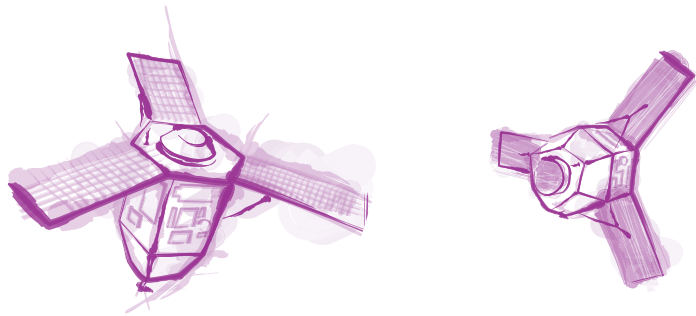
Pléiades 1A and Pléiades 1B operate as a constellation in the same orbit, phased 180° apart. The identical twin satellites deliver very-high-resolution optical data products with an unrivalled reliability when it comes to collecting a new image.

### Features

- Detailed & precise: 50-cm products.
- Fast & frequent: daily revisit capacity and highly reactive tasking.
- Available & flexible: advanced agility and truly available capacity.
- Stereo / Tristereo new acquisitions and archive.

### Benefits

- Ideal for precision mapping and in-depth intelligence.
- Particularly suitable for emergency response and up-to-daily change detection.
- An industry-leading acquisition success rate, for reliable and timely decision-making.
- Detailed and solid 3D models, affordable even in the most inaccessible locations.



## Technical Specifications

Number of Satellites	2 – Pléiades 1A and Pléiades 1B, featuring a true constellation
Launch	Pléiades 1A: December 17, 2011; Pléiades 1B: December 2, 2012
Orbit	Sun-synchronous, 10:30 AM descending node, 26-day cycle, 694-km altitude
Spectral Bands	Panchromatic, Blue, Green, Red, Near Infrared for all acquisitions
Product Resolution	Panchromatic: 0.5 m; Multispectral: 2 m
Geolocation Accuracy	8.5 m CE90 at Nadir
Dynamic Range at Acquisition	12 bits
Swath	20 km at Nadir
Revisit Capacity	Daily, everywhere
Pointing Agility	Allows single pass collection scenarios over areas as big as 120 x 110 km, and also Stereo or Tristereo imagery acquisition. 60° slew in 25 seconds – 200 km in 11 seconds including stabilization time
Acquisition Capacity	700,000 km <sup>2</sup> / day (max. capacity), with an average of 500,000 km <sup>2</sup> / day – 1.2 times the equivalent of the Earth landmasses per year
Mission Lifetime	Minimum of 5 years with an estimated life of more than 10 years



# SPOT

## The Ideal Solution for Country-Wide, Demanding Applications

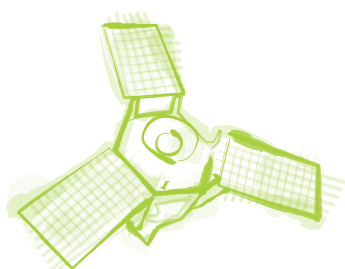
The SPOT 6 & 7 constellation is specifically designed to efficiently cover huge areas in record time. National basemap series are now de-facto updated to support large-scale cartographic and land monitoring applications.

### Features

- Global & frequent: daily capacity of 6 million km<sup>2</sup>.
- Wide & homogeneous: 1.5-m products.
- Optimized & efficient: daily revisit capacity everywhere.
- Stereo / Tristereo new acquisitions and archive.

### Benefits

- Complete coverage of any area of interest in record time. The entire landmass is updated yearly, including nation-wide intra-year monitoring.
- Excellent for topographic cartography from 1/250,000 to 1/25,000.
- Superior coverage speed even in persistently cloudy areas.
- Country-wide and adequate 3D models, with ready-to-go Stereo / Tristereo archive over the driest deserts and the steepest mountains.



### Technical Specifications

Number of Satellites	2 – SPOT 6 and SPOT 7, featuring a true constellation
Launch	SPOT 6: September 9, 2012; SPOT 7: June 30, 2014
Orbit	Sun-synchronous, 10:00 AM descending node, 26-day cycle, 694-km altitude
Spectral Bands	Panchromatic, Blue, Green, Red, Near Infrared for all acquisitions
Product Resolution	Panchromatic: 1.5 m; Multispectral: 6 m
Geolocation Accuracy	< 18 m CE90 at Nadir
Dynamic Range at Acquisition	12 bits
Swath	60 km at Nadir
Revisit Capacity	Daily, everywhere
Pointing Agility	Allows single pass collection scenarios over areas as big as 300 x 330 km, and also Stereo or Tristereo imagery acquisition. 60° slew in 25 seconds – 200 km in 11 seconds including stabilization time
Acquisition Capacity	6,000,000 km <sup>2</sup> / day (max. capacity), with an average of 3,600,000 km <sup>2</sup> / day – 8.8 times the equivalent of the Earth Landmasses per year
Mission Lifetime	Minimum of 10 years

# DMC

## Rapid and Cost-Effective Continental Screening

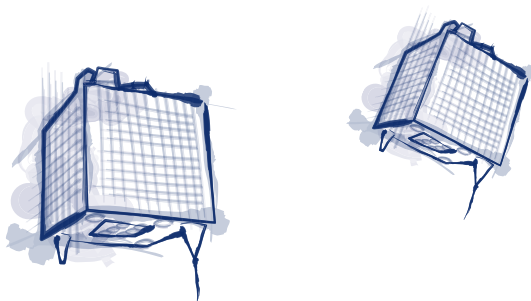
The DMC Constellation provides timely coverage and rapid revisit times for the largest countries or entire continents. It is the economical solution for agricultural yield estimates, deforestation / fire footprint assessments and large-scale disaster management.

### Features

- Quick and global: vast daily collection capacity, with extra-large image footprint.
- Frequent and timely: 3-medium resolution clone satellites.
- Cost-effective and labour-efficient: 22 m spatial resolution (GSD) with 3 spectral bands (NIR, R,G).
- Historical and consistent: radiometric cross-calibration to Landsat 7 ( $\pm 1\%$ ).

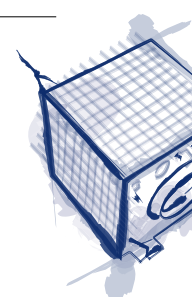
### Benefits

- Countries, regions, and even continents are rapidly covered.
- Ideal for wide-area change detection and disaster management.
- The perfect tool for small-scale land cover mapping, environmental, forestry and agriculture monitoring.
- Leverage Landsat archive easily, to assess long-term changes.



## Technical Specifications

Number of Satellites	3 - UK-DMC2, DEIMOS-1 and NigeriaSat-X
Launch	UK-DMC2, DEIMOS-1: July 29, 2009; NigeriaSat-X: August 17, 2011
Orbit	UK-DMC2, DEIMOS-1: Sun-synchronous, 10:30 AM ascending node, 5-day cycle, 660-km altitude NigeriaSat-X: Sun-synchronous, 11:15 AM descending node, 5-day cycle, 700-km altitude
Spectral Bands	Green, Red, Near Infrared for all acquisitions
Product Resolution	22 m
Geolocation Accuracy	< 22 m CE90 at Nadir
Dynamic Range at Acquisition	10 bits
Swath	Adjustable up to 620 km
Revisit Capacity	Daily to every 2 days, everywhere on Earth
Acquisition Capacity	22,000,000 km <sup>2</sup> / day (max. capacity), with an average of 6,500,000 km <sup>2</sup> / day – 15.9 x the equivalent of the Earth Landmasses per year
Mission Lifetime	Expected operation lifetime of 8-10 years



# TerraSAR-X, TanDEM-X and PAZ

## Industry-Leading Quality, Best-In-Class Versatility

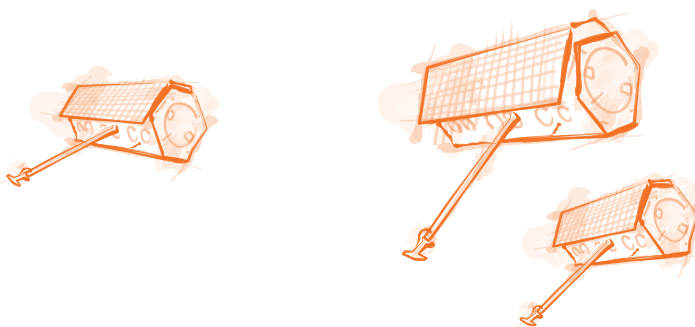
TerraSAR-X and its TanDEM-X twin fly in formation just a few hundred metres apart. They will soon be joined by the Spanish satellite PAZ, a third clone. All three satellites reliably acquire the widest range of radar images, from the highest resolution to very wide coverage - regardless of weather and day light conditions.

### Features

- Versatile and flexible: from the very big to the very small (25 cm).
- Reliable and timely: strong acquisition capacity, daily revisit in most latitudes, professional delivery.
- Exact and precise: below 1 m geolocation accuracy and premium radiometry.
- Stereo / Tristereo new acquisitions and archive.

### Benefits

- From extensive maritime coverage to photo interpretation close to optical (commercially unique resolution).
- Powerful for change detection or monitoring - cloud and day-light independent.
- No need for external ground control points.
- Accurate and multiscale 3D models, even in areas with persistent cloud cover.



## Technical Specifications

Number of Satellites	3 – TerraSAR-X, TanDEM-X, and PAZ operated as a constellation					
Launch	TerraSAR-X: June 15, 2007; TanDEM-X: June 21, 2010 PAZ: Expected 2016					
Orbit	Sun-synchronous repeat orbit with 11 days repeat period (4 / 7 days in constellation with PAZ), equatorial passing time 06:00 AM (descending pass), 06:00 PM (ascending pass), 514-km altitude					
Centre Frequency	9.65 GHz (X band)					
Polarization	Single, dual (quadruple during dedicated acquisition campaigns)					
Imaging Modes	Staring SpotLight	High Res. SpotLight	SpotLight	StripMap	ScanSAR	Wide ScanSAR
Resolution	Up to 0.25 m	Up to 1 m	Up to 2 m	Up to 3 m	Up to 18.5 m	Up to 40 m
Swath	4 x 3.7 km <sup>2</sup>	10 x 5 km <sup>2</sup>	10 x 10 km <sup>2</sup>	30 x 50 km <sup>2</sup>	100 x 150 km <sup>2</sup>	Up to 270 x 200 km <sup>2</sup>
Geolocation Accuracy	Up to 1 m depending on incidence angle and DEM utilized for orthorectification					
Revisit Capacity	Daily for most latitudes with upcoming PAZ					
Acquisition Capacity	5,400,000 km <sup>2</sup> / day (max. capacity) – with images as wide as 400,000 km <sup>2</sup> cleared in a pass					
Mission Lifetime	5 years for both satellites (TerraSAR-X and TanDEM-X), an extended lifetime beyond 2018 is expected					

# Get the Most with Airbus Defence and Space's Satellites Constellation

## Big Picture and Sharp Details

No compromise to get the overall view AND the capacity to zoom:

- Ideal combination between coverage and resolution,
- From local insight (1/5,000) to nationwide mapping,
- From detection up to identification,
- Cost and time efficient.

## Reliable Access

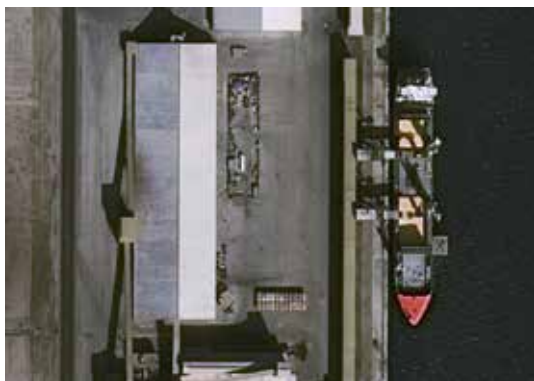
The information when and where you need it:

- Fresh and extensive archive available at your fingertips,
- Industry leading success rate in new collections.

## Intensive Monitoring

Demand the closest surveillance where things change fast:

- From bare raw data to turn-key interpretation,
- From anticipation and routine to emergency response,
- From extensive to intensive monitoring.



Pléiades 1A & 1B - 0.5 m



SPOT 6 & 7 - 1.5 m



TerraSAR-X  
Staring SpotLight - 0.25 m



TerraSAR-X  
StripMap - 3 m



UK-DMC2 - 22 m

No one type of sensor can solve all of the issues you face. With its smart constellation of radar and optical satellites, Airbus Defence and Space provides the right information at the right time: wide coverage, fine detail, intensive monitoring, successful new collections, extensive archives and premium reactivity.

### **Get Access to Information When You Need it**

At Airbus Defence and Space, Customer Care and Satellite Tasking are not only departments, they are a mindset. Our experience dates back to 1982 and ever since then, a team of world-class tasking experts ensure, day after day, that your area is covered on time and on spec. They carefully conduct feasibility studies. They closely follow up open tasking requests. They constantly adjust priorities. They do not hesitate to use satellite capacity, even in difficult areas, whenever there is a chance to capture the desired target. All of that fine-tuning is in our DNA and more than any technical feature, this is the secret of our reliability.

### **Play with Scales, Optimise Your Budget**

Just like with a hand-held camera, the value of satellite imagery cannot be judged merely by a number of pixels. The quality of the camera itself is key. The value also depends on the ability to change from the wide angle to the telephoto lens, depending on the focus.

Thanks to our wide choice of sensors and options, our customers can accurately evaluate a situation and make informed decisions, in full respect of their budget, specifications and timelines.

### **Demand the Closest Surveillance Where Things Change Fast**

With a 30-year extensive imagery archive and intra-daily revisit opportunities, we can bring information with the required frequency. Whether one wants to track changes at country-scale or within a construction site, regardless of the weather or lighting conditions, the monitoring we can provide is the most comprehensive on the market today. We bring reliable, extensive and detailed surveillance over any area of interest, with the appropriate level of analysis - from raw imagery all the way to sophisticated photointerpretation.

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#### **Airbus Defence and Space**

Australia, Brazil, China, Finland, France, Germany, Hungary, Singapore, Spain, United Kingdom, United States

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