

SPOT 6 | SPOT 7

Technical Sheet

Technical Features

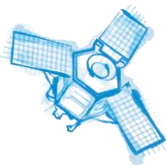
With SPOT 6 and SPOT 7, Astrium secures the mission continuity of the SPOT series, which has collected an archive of more than 30 million scenes since 1986. This new generation of optical satellites features technological improvements and advanced system performance that increases reactivity and acquisition capacity as well as simplifying data access.

Products

Products	1.5m Resolution <ul style="list-style-type: none">▪ Panchromatic▪ Multispectral 3-bands: R, G, NIR or R, G, B▪ Multispectral 4-bands: R, G, B, NIR
Location Accuracy	10 m (CE90)
Swath	60 km at Nadir, max strip length = 600 km
Processing Levels	Primary, Ortho, Tailored Ortho

Space Segment

Number of satellites	2
Launch periods	<ul style="list-style-type: none">▪ SPOT 6: September 9, 2012▪ SPOT 7: Q1 2014
Design lifetime	10 years
Size	<ul style="list-style-type: none">• Body: ~ 1.55 x 1.75 x 2.7 m• Solar array wingspan 5.4 m²
Launch mass	712 kg
Altitude	694 km
Onboard Storage	1 TB



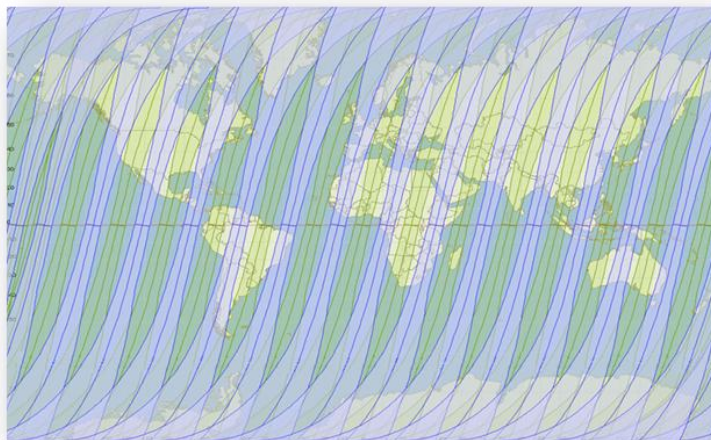
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Orbital Characteristics and Viewing Capability

The SPOT 6 and SPOT 7 missions are designed to provide large area coverage and detailed information on individual targets. This is possible thanks to the superior agility of the satellite.

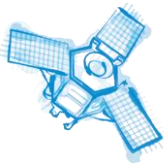
Orbit	Sun-synchronous; 10:00 AM local time at descending node
Period	98.79 minutes
Cycle	26 days
Viewing Angle	Standard: +/- 30° in roll Extended: +/- 45° in roll
Revisit	<ul style="list-style-type: none"> ▪ 1 day with SPOT 6 and SPOT 7 operating simultaneously ▪ Between 1 and 3 days with only one satellite in operation¹
Pointing Agility	Control Moment Gyroscopes allow quick maneuvers in all directions for targeting several areas of interest on the same pass (30° in 14 seconds, including stabilization time)
Acquisition Capacity	Up to 6 million km ² daily with SPOT 6 and SPOT 7 when operating simultaneously
Nominal Imaging Mode	<ul style="list-style-type: none"> ▪ 60-km swath strips oriented along North-South axis ▪ Up to 600km length
Stereo Capability	Single pass stereo and tri-stereo (fore, nadir and aft mode)



Daily revisit for the SPOT 6 and SPOT 7 constellation:

SPOT 6 (blue) and SPOT 7 (green) combined visibility areas for a given day (viewing angle +/-30°only)

¹ Depends on the latitude of the area of interest

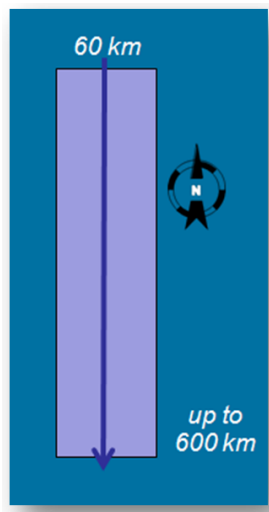


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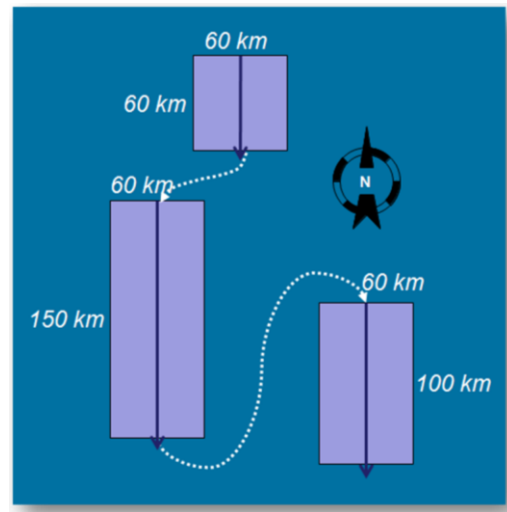
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Imaging Modes

The high agility of the SPOT 6 and SPOT 7 constellation is used to offer efficient data collection capabilities particularly suited to serve cartographic and monitoring applications.

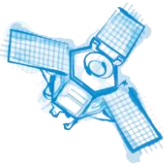


a. Standard data collection: Long strip

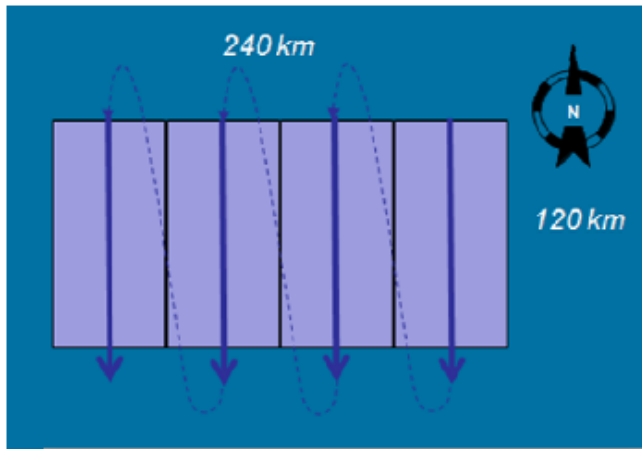


b. Standard data collection: Target

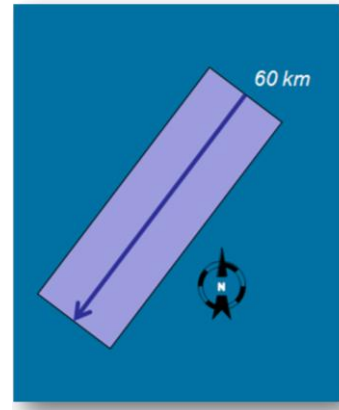
Standard data collection mode enables a (a) North-South long strip of up to 600 km length to be acquired in one pass. In addition, the high satellite agility allows for (b) very quick moves from one scene to another along an orbit. This provides the ability to complete global data coverage over a large area of interest in a short period of time, to better avoid acquisition conflicts and to collect of a significant number of distant targets in a given geographical area in a single pass.



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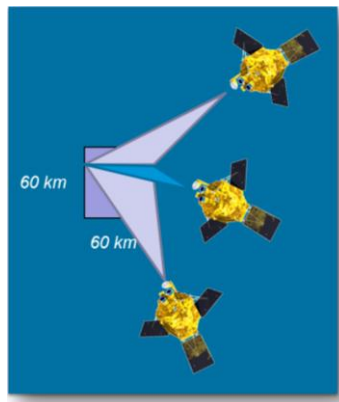


c. Single pass: Multi-strip collection



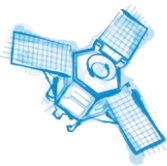
d. Single pass: Corridor collection

SPOT 6 and SPOT 7 are able to acquire (c) contiguous image segments collected from a single pass along one orbit. This provides the capability to cover areas of more than 120 km x 120 km or 60 km x 180 km in a single pass. Corridor acquisition (d) allows for rapid coverage of certain areas in an effective way (e.g. riverbeds, borders, etc.).



Single pass: Stereo capability

Stereo pairs or Stereo triplets of images are collected from a single pass along one orbit for the generation of DEM data, in order to complement efficiently the HRS mission of SPOT 5. The satellite collects pairs or triplets of images over areas of interest with viewing angles between two consecutive images separated with only 15° or 20° with a B/H ratio between 0.27 and 0.4.



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Instruments

Optical System	One instrument made of a two identical Korsch telescopes, each with a 200 mm aperture
Detectors	<ul style="list-style-type: none"> ▪ PAN array assembly: 28,000 pixels ▪ MS array assembly: 4 x 7000 pixels
Spectral Bands	Panchromatic: 0.450-0.745 mm Blue: 0.450-0.520 mm Green: 0.530-0.590 mm Red: 0.625-0.695 mm Near Infrared: 0.760-0.890 mm <i>The 5 bands are always acquired simultaneously.</i>
Ground Sampling Distance (nadir)	<ul style="list-style-type: none"> ▪ Panchromatic: 2.2m ▪ Multispectral: 8.8m
Swath	60km at nadir
Dynamic Range at Acquisition	12 bits per pixel
Location Accuracy Specification	<ul style="list-style-type: none"> ▪ 35m CE 90 without GCP within a 30° viewing angle cone ▪ 10m CE90 for Ortho products where Reference3D is available
Instrument Telemetry Link Rate	X-band channel - 300 MB / second

Ground Segment

Main Receiving Stations	<ul style="list-style-type: none"> ▪ Toulouse (France) ▪ Kiruna (Sweden)
S-Band Uplink Stations	<ul style="list-style-type: none"> ▪ Kiruna (Sweden) ▪ Inuvik (Canada)
Programming Center	Astrium GEO-Information Services – Toulouse (France) Astrium GEO-Information Services – Chantilly, VA (USA)
Production Center	Astrium GEO-Information Services – Toulouse (France)
Tasking Plans Refresh Frequency	6 times / day / satellite
Update of Weather Forecast	4 times / day – fully automatic process
Satellite Control Center	Astrium Satellites – Toulouse (France)