SATPALDA
GEOSPATIAL SERVICES
ISO 9001:2008

QuickBird

DigitalGlobe's QuickBird satellite offered sub-meter resolution imagery. Initially at an operational altitude of 482 km, QuickBird was operated at an altitude of 450 km and continued in an gradual descent until its end of mission life in 2015 at an altitude of 300 km.

QuickBird provided commercial imagery at 0.61 m (PAN) and at 2.4 m (MS) resolution. A successful launch of QuickBird took place on Oct. 18, 2001 on a Delta-2 vehicle of Boeing from Vandenberg Air Force Base, USA and its mission life decayed in 2015.

Trivia:

In 2001 the QuickBird project of DigitalGlobe opted for a fairly low orbital altitude of 450 km (from the previous 600 km altitude level) to obtain a higher ground spatial resolution of the imagery; however, at the expense of swath width. Naturally, the low orbit of 450 km requires more orbit raising manoeuvres due to the increased drag influence of the atmosphere. The argument went that the S/C carries enough fuel to adjust the lower orbit more frequently over the operational lifetime of the mission. (source: eoportal.org).

Fig.1 QuickBird satellite

Fig. 2 QuickBird clean room pre-launch preparations

SATPALDA
GEOSPATIAL SERVICES
ISO 9001:2008

QuickBird Satellite Specifications are as follow-

Launch information:	Date: October 18, 2001 Launch vehicle: Delta II Launch site: SLC-2W, Vandenberg Air Force Base, California	
Mission life:	Extended through mid-2014 to 2015	
Spacecraft size:	2400 lbs., 3.04 m (10 ft.) in length	
	Altitude 450 km	**Altitude 300 km**
Orbit:	Type: Sun-synchronous, 10:00 am descending node Period: 93.6 min	10:00 am descending node Period: 90.4 min
Sensor resolution and spectral bandwidth:	Panchromatic: 61 cm GSD at nadir B&W: 405 – 1053 nm Multispectral: 2.44 m GSD at nadir Blue: 430 – 545 nm Green: 466 – 620 nm Red: 590 – 710 nm Near-IR: 715 – 918 nm	Panchromatic 41 cm GSD at nadir Multispectral : 1.63 m GSD at nadir
Dynamic range:	11-bits per pixel	
Swath width:	Nominal swath width: 16.8 km at nadir	Nominal swath width: 11.2 km at nadir
Attitude determination and control:	Type: 3-axis stabilized Star tracker/IRU/reaction wheels, GPS	
Retargeting agility:	Time to slew 200 km: 38 sec 44 sec	
Onboard storage:	128 Gb capacity	
Communications:	Payload data: 320 Mbps X-band Housekeeping: X-band from 4,16 and 256 Kbps, 2 Kbps -band uplink	
Revisit frequency: (at 40°N latitude)	2.4 days at 1 m GSD or less 5.9 days at 20° off-nadir or less	2.1 days at 1 m GSD or less 8.7 days at 20° off-nadir or less

Ball Aerospace & Technologies Corp. developed QuickBird, which was the highest resolution commercial satellite at the time, as well as DigitalGlobe's subsequent WorldView-1, WorldView-2, and WorldView-3 satellites.

Collection scenario is shown as a figure below-