

Namaste Research

Upcoming Intelsat Platforms

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Comments and corrections to W5NYV@amsat.org

The following three satellite platforms are the ones listed as future satellite platforms for Intelsat launches. Source: wikipedia entry for Intelsat.

SS/L-1300

Space Systems Loral

“The 1300 bus is a leader in power, performance, and reliability. As a modular, space-proven platform, it has the flexibility to accommodate a wide range of satellite services. The central cylinder structural configuration is a strong foundation for continual evolutionary development to deliver increasingly higher power, greater flexibility, and longer mission life. Modular subsystem building blocks allow efficient customization of the 1300 platform to specific mission and payload requirements, supporting the demanding deployment schedules of commercial space programs. Today there are 48 of the 1300 model satellites in service in geosynchronous orbit. Four more are ready for launch and 14 are under construction at SS/L’s Palo Alto, California facilities.” SSL COTS Fact Sheet December 2007

“The 1300, an industry leader in power, performance, and reliability, is a space-proven platform for a wide range of satellite services. The 1300 was first introduced in the mid-1980s and has been in constant evolutionary development to deliver increasingly higher power, greater flexibility, and longer mission life, keeping SS/L in the forefront of satellite technology. The versatile 1300 series has a total satellite power capability ranging from 5 to 25 kW continuously throughout the life of the spacecraft, and can support from as few as 12 active transponders to as many as 150 transponders.

SS/L’s 1300 features a lightweight and high-strength structure, fuel-efficient attitude and stationkeeping subsystems, high efficiency and reliable solar arrays and batteries, and advanced command and control subsystems.

SS/L manufactures the 1300 in our state-of-art facility in Palo Alto, California. Integration of components into payload and bus subsystems, as well as satellite system level testing, are all performed in this location with highly efficient and well-established processes. This centralized production philosophy coupled with colocated subsystem and systems engineering resources enables SS/L to deliver reliable satellites on a dependable schedule.” SS/L products webpage

Orbital Star-2 Bus

“STAR Bus is a satellite platform manufactured by Orbital Sciences Corporation with an apogee kick motor to place a communications satellite into geostationary orbit, a thruster to provide

the satellite with orbital station-keeping for a 15 year mission, and solar arrays to provide the satellite payload with 5kW of electrical power. The first satellite based on the STAR Bus platform was IndoStar-1, which was launched in November 1997.” Wikipedia entry for STAR Bus.

“2007 October 5 - Intelsat IS-11 - Program: Intelsat. Launch Site: Kourou. Launch Vehicle: Ariane 5G. Perigee: 35,778 km (22,231 mi). Apogee: 35,797 km (22,243 mi). Inclination: 0.10 deg. Period: 1,436.10 min.” www.astronautix.com

“In early 2001, Orbital firmly established itself as a major U.S. GEO satellite supplier with a contract from PanAmSat Corporation, which owned and operated one of the world's largest private fleets of commercial GEO communications satellites. Orbital was selected to supply one C-band GEO satellite designated Galaxy XII to be located at 72° W longitude. In late 2001 PanAmSat exercised an option for two additional C-band spacecraft. The satellites were to distribute entertainment and information to cable television systems, TV broadcast affiliates, direct-to-home TV operators, Internet service providers, telecommunications companies and corporations.

Characteristics of this version of the Star bus were:

- Customer: PanAmSat Corporation - Greenwich, Connecticut
- Mission: C-band communications for CONUS, Alaska and Hawaii
- Performance: Repeater - two groups of 16:12 linearized traveling wave tube assemblies (TWTAs)
- Transponder Power - 37 watts RF at saturation at EOL
- Stabilization - 3-axis, zero momentum
- Launch mass - 1,760 kg
- Mission life - 15 years (> 15 years of fuel)
- Status: Galaxy XII launch expected in early 2003.” www.astronautix.com

“Orbital’s StarBus satellite platform, which is designed for 15-year missions in geosynchronous orbit, is compatible with the Delta II, Ariane, Proton and Long March launch vehicles. The structure consists of a rectangular body with a central composite thrust tube housing the apogee kick motor. Payload equipment is mounted on the north and south side panels and on the nadir-facing deck providing excellent fields of view for Earth-viewing instruments and for thermal radiators. Articulated sun tracking solar arrays are deployed in two wings from the north and south faces of the spacecraft.

Originally designed for geosynchronous telecommunications applications, StarBus can be adapted to technology demonstrations and Earth and space science programs such as GOES. For ten-year missions launched on a Delta, payloads up to 200 kg and 555 W can be accommodated, with growth possible for shorter missions. Standard interfaces and protocols such as MIL-STD-1553, CCSDS and 28V power simplify integration.

StarBus is ideal for geosynchronous missions since it is capable of withstanding the severe environments of high altitude orbits and providing the large impulse required to attain geosynchronous orbit. Several available options augment the basic bus to provide improved

pointing, more payload power, secure communications, higher downlink data rates or enhanced payload computing power.

StarBus is designed for missions up to 15 years in duration. The propulsion system is sized for ten years of stationkeeping in geosynchronous orbit. Built-in radiation hardness for the severe geosynchronous environment is achieved through conservative selection of electronic parts. Designed to be compatible with vehicles such as Ariane, which commonly launch multiple payloads, the StarBus design offers frequent, cost-effective launch-sharing opportunities. Customers can purchase the StarBus spacecraft bus alone, or as part of a turn-key service that includes an integrated payload, operations and data delivery as well.

Designed and developed as a standard bus for commercial telecommunications and direct broadcast missions, StarBus fills a market niche for small, high power geosynchronous communications spacecraft. Orbital's first application of the StarBus design, IndoStar 1, was successfully launched in November 1997 along with another satellite on an Ariane rocket.”
space.skyrocket.de

Astrium E3000

“The Astrium E3000 is a model of communication satellite manufactured by EADS Astrium; it is a member of Astrium's Eurostar family. It uses chemical station-keeping thrusters, and was the first commercial satellite family to use lithium-ion batteries, rather than nickel-based technologies, for power supply during eclipses.

As always, the basic E3000 bus can be modified extensively to meet customer requirements, but E3000 satellites all have a launch mass of around 4500 kilograms, and 35-metre solar arrays providing between nine and ten kilowatts at end of life. They tend to feature around fifty transponders, of which around 32 are Ku-band and the remainder C-band.

Satellites built around the E3000 platform include Hispasat's Amazonas, Telesat's Anik F1R and Anik F3, Eutelsat's W3A, and the Inmarsat 4 series of satellites; Inmarsat 4 uses 45-metre solar arrays providing 14 kilowatts, and has a large deployable reflector as main antenna.”

“Anik F3 Series | Satellite Gallery | Satellites | Telesat

Satellites. Anik F3. Anik F3 satellite information, photos and videos.. Anik F3 Type: EADS Astrium - E3000 Weight: 4639 kg Transponders: 32 Ku-band 24 C-band 2 Ka-band Launched: April 9, 2007 Vehicle: Proton/Breeze M Service Life: 15 years” www.anikf.com