

COMMERCIAL SATELLITES ADD-ON
PART 1: BOEING 702

By Istochnikov

About the add-on

This add-on contains some communication satellites who want be launched on the Dr Martin Schweiger's Orbiter ® Space Flight Simulator.

The Reason

This add-on borns because I'm SO angry because a great portion of the add-ons developed for this simulator are or rockets or fictional spaceships... at least in my main installation (that mainly has real-life spacecrafts), there is a supercomplete rocket catalogue, but satellites?... almost nothing. The few satellites I could launch on the simulator (nearly 35 without counting the near 15 of Gazza's STS Payloads, and from these 35 only TWO commercial) are or the french community's (Thank you very much :D) or the STS Payloads' or the Brian Jones' ones (Excelent art pieces) or the Great Explorations Pack (they need an update urgently). It's time to load these rockets some payload that isn't the Carina or the L3 Probe (Hail!)

My project has been presented in April 2007, but due to personal reasons it has been suspended until February 2008, when MajorTom asked for a payload for his Zenit 3SL rocket. Now, it is the result... Soon I'll release too the Boeing 601 satellites and the Thales-Alenia's Spacebus Series.

Requeriments

First at all

- Orbiter 2006 P1 version
- Ariane 5 by Well and NoMatter
- Atlas 5 By Jim Clem
- Attitude MFD by
- Delta 4M by DaveS
- Proton UR 500 by Papyref or Proton LV from Thornton (if possible, both)
- Sea Launch by MajorTom (my DirecTV 11 is included)

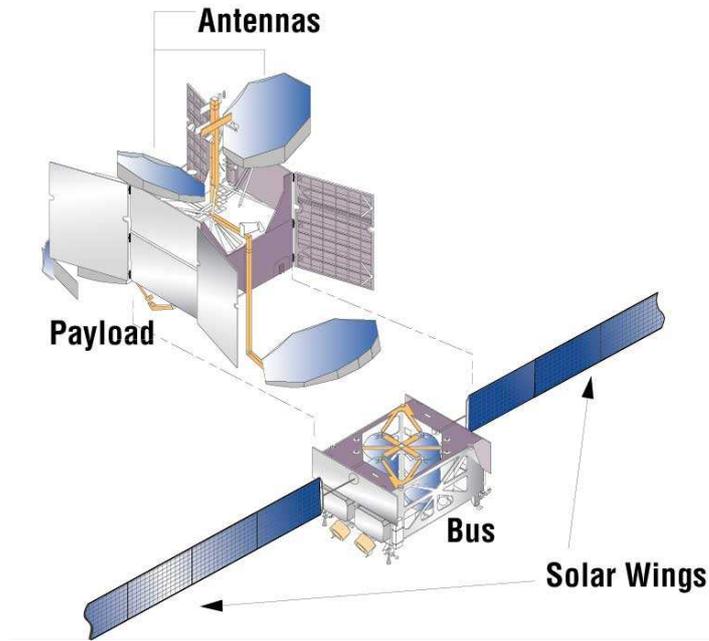
History

The Hughes/Boeing 702 setellite bus was introduced in the satellite market in 1995 in a leap ahead the customer's requeriments.

These satellites, based on the sooooo popular Hughes/Boeing 601/601HP, are composed of two modules: the propulsion module that houses the solar arrays, propulsion systems, ion engines and attitude engines, batteries, etc; and the payload module.

The first version of the 702 series (not represented in this add-on) had reflectos in the solar panels. Two arrays of mirrors concentrate more solar energy for generating more electricity. Unfortunately, these mirrors degraded soooooooo

much faster than expected, so the satellites that had them were dropped for back-up functions.



The second version has an additional panel in each array that replaces the mirrors. The panels of this version count with an improved compound of gallium-arsenide. This allows collecting even more energy than the panels with reflectors.

Both series count with Xenon-Ion Engines (known as XIPS) and a conventional engine (Marquadt R-4D-15 445N engine) for orbital insertion. The XIPS are used for station-keeping 5-

hours burns. This allows the use of only 5 kilos of xenon per year for station-keeping.

In this moment, there are 21 Boeing 702 satellites in orbit and one (DirecTV 11) awaiting launch.

The Satellites.



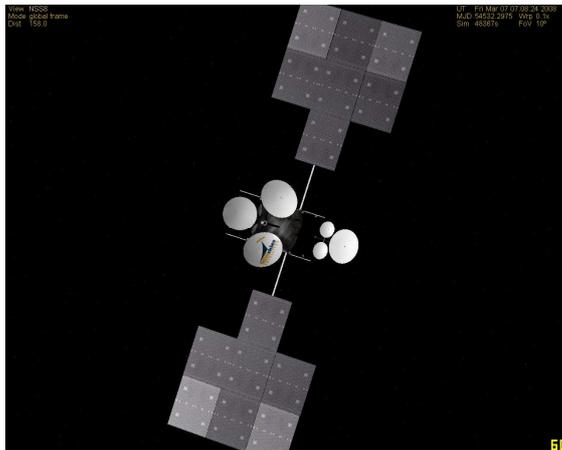
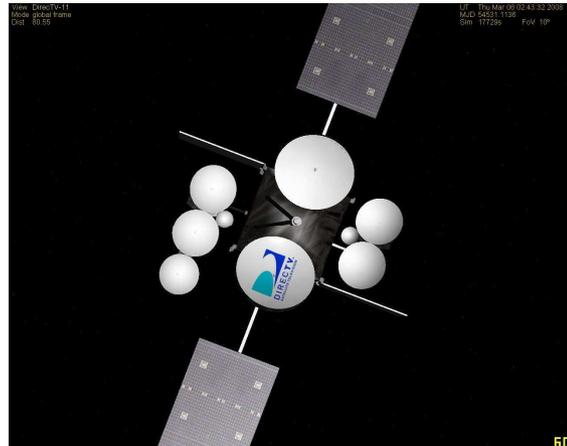
Telesat Canada Anik F2:

It was launched from the European launch center in Kourou, French Guiana the 18th July 2004. This satellite weighs near 6 tons and it's the first satellite in offering services in the K-band in north-american territory.

DirecTV 10, DirecTV 11 and DirecTV 12
 DirecTV 10 was launched in October 2007 from the Baikonur Cosmodrome in Kazakhstan. Weights 6080 Kg at launch.

DirecTV 11 will be launched the next narch 9th (maybe you'll launch my version before the real one can fly : P) from the Sea Launch Odyssey in the Pacific. This satellite weights 5923 kilos.

Both satellites have transponder equipment in the Ka band and will be used on Direct-To-Home television broadcasting on North-America, Alaska and Hawaii.



New Skies Satellite 8:

Sadly, this satellite was destroyed when the Zenit 3SL launcher fell on the Sea Launch Odyssey the January 31st 2007.

It weighted 5800 kilos and its destiny was cover with its 88 transponders in C and K-under (Ku) bands the Middle-East, India and Asian South-East.

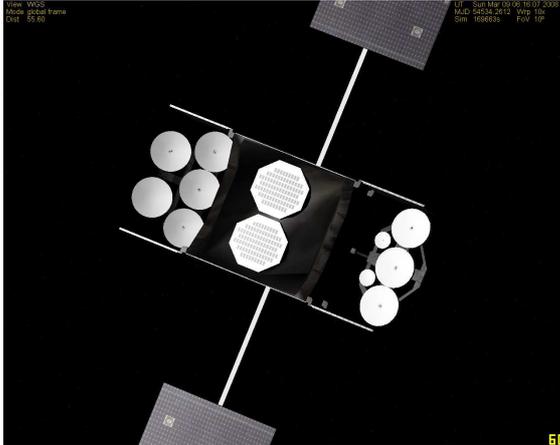
Spaceway 1, 2, 3:

Their objective was the internet broadcasting, but the lack of demand destined them for DTH TV Broadcasting.

With an average weight of 6100 kilos, the first two satellites took of the April 26th and November 16th 2005 aboard Zenit 3SL and Ariane 5 respectively. Spaceway 3 will be lanched this year.

All satellites have a Ka-band regenerative payload.





Wideband Gapfiller Satellite System:

These satellites are the replacement for the DSCS military comsats. They have cross-linked regenerative payloads in SHF, X and Ka bands.

Two of these satellites were launched.

How do they work?

All of these satellite work using the Vinka's Spacecraft3 library:

L-Shift+1: All system deployment

Ctrl + +/-: Main Engine Control

J: Activate XIPS (focus on them and control them with Control + +/-)

Known Bugs

-I can't make the NSS-8 solar arrays deploy correctly yet. This satellite has a completely different array arrangement, very different form other launched satellites (except the Space Systems/Loral's ones, but this is other story)

In next versions

- Addition of the XM Rhythm and XM Blues satellites
- Addition of the Thurayas 2 and 3 and MSV 1,2, SA Satellites
- Autopilots*
- Solar Panel Auto-tracking*
- Built-in config mesh Functional XIPS*
- *(requires a completely new library)

License:

-You can distribute this add-on freely. Its sale is forbidden.

-If you distribute the add-on, distribute it complete, not by parts. ADD-ON DEVELOPERS: please contact me if you want include my satellites in your add-on packs. (MajorTom is the First Developer that has done it).

-I give this add-on as it is. Don't guilt me for any incident you have as CTDS, data lost, viruses, insomnia, terrible academic performance, firing from job by absences, girlfriend ruptures, dogs dead by starvation, damage of your rooms by irruptions by the police due you don't exit your room, the re-election of George Bush, a naked Bin Laden apparition in your room (yuck!!!!!!), etc, etc, etc...

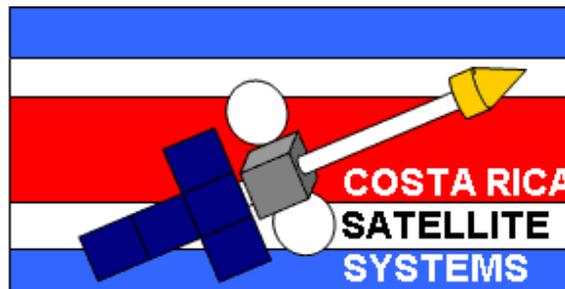
Thanks to...

- Dr Martin Scheiger for doing the best space flight simulator ever seen...
- Brian Jones, for allowing me the use of some of his textures in the development of these satellites. :-)
- My brother Luis Fernando and my best friend Rolando for the support and their evaluations with the test models (CACIQUE 1, QUINCHO-A, GOONNETSAT, TICOSAT ® Series A and B...)
- To the add-on developers that (in a not intentional fashion) give me the development sector practically free.
- MajorTom for make me reactivate the project after months of paralysis and being a tester. For this, I've authorized him for using my DirecTV 11 satellite as a part of his Zenit 3 SL Add-on (:~P)

Technical Support:

Questions, Comments, Bug reports, etc, etc, etc, send them to istochnikov@gmail.com (put in the subject "Commercial Satellites", insults will be ignored)

Telephonic support from march 20th on +506-8321-9889. ONLY IN SPANISH :-P



Nicoya, Guanacaste

© Costa Rica Satellite Systems ®

San Pablo, Heredia; Nicoya, Guanacaste;
San Joaquín de Flores, Heredia; Tibás, San José
2008

All Rights and Lefts Reserved