



MINISTÉRIO DA CIÊNCIA, TECNOLOGIA, INOVAÇÕES E COMUNICAÇÕES
INSTITUTO NACIONAL DE PESQUISAS ESPACIAIS

Bem vind@s

10 de julho de 2018



CBERS 04A CRITICAL DESIGN REVIEW (CDR)



Satellite Space Radiation

- CBERS 04A has a synchronous solar orbit, with altitude around 628.6km and 97.9° of inclination and has a designed lifetime of five years.
- Among all space environments where CBERS 04A will be, the main one is the radiation environment which includes radiation belt, SCR (solar cosmic ray) and GCR (galactic cosmic ray).
- These environments interact with spacecraft and cause TID (total ionizing dose), DDD (displacement damage dose), SEE (single event effect) etc.



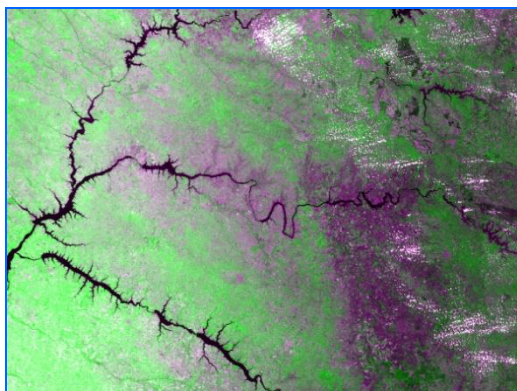


Áreas

Ciência Espacial e Atmosférica



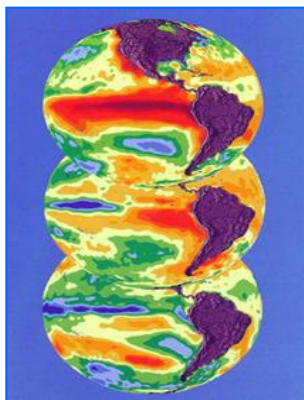
Observação da Terra



Ciência do Sistema Terrestre



Meteorologia e Estudos Climáticos



Engenharia e Tecnologia Espacial

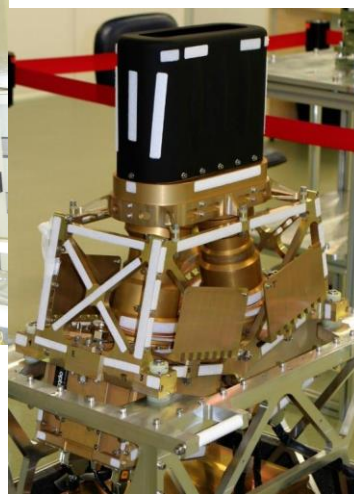
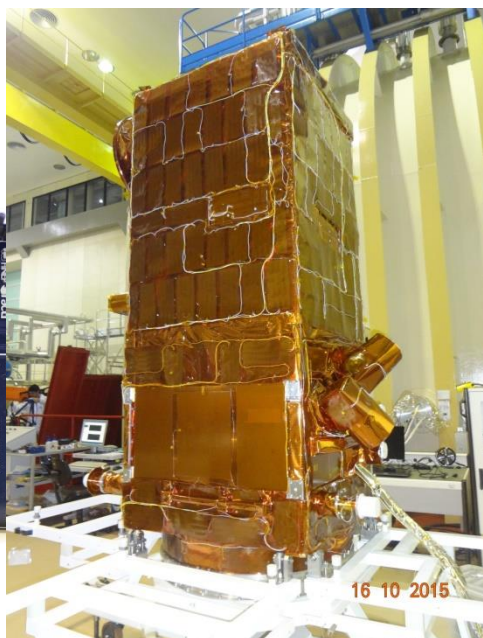


Labs Tecnologias Espaciais

Lab de Integração e Testes

Centro de Controle e Rastreo de Satélites

Unidades Regionais





Programa Espacial



Antecedentes



Satélite de Coleta de Dados



SCD1 – 1993

SCD2 – 1998







Programa CBERS

Programa CBERS

Lançamento 1999



CBERS 1

2002

Final de vida

2003



CBERS 2

2009

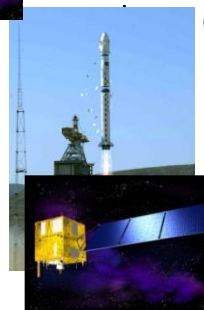
2007



CBERS 2B

2010

2013



CBERS 3

2014



CBERS 4

Em operação



Agricultura, Minas Gerais, Brasil – Mar, 2016)



Guarulhos, Brasil - Out, 2016

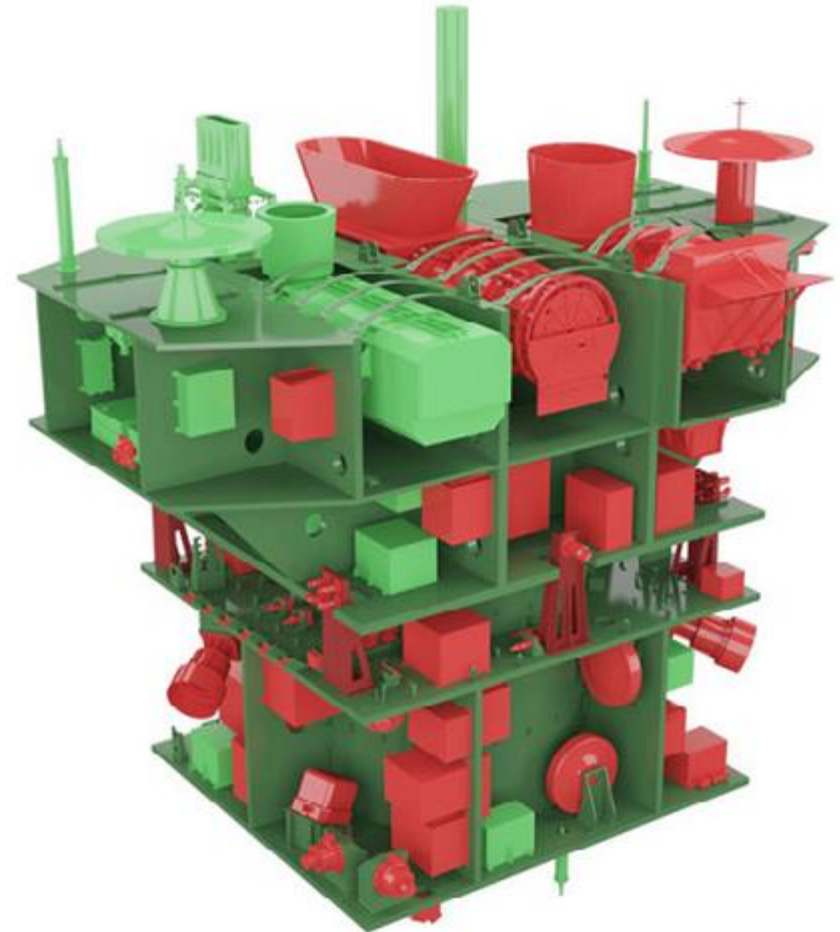


GRU Aeroporto, Brasil - Out, 2016



Santiago, Chile (Fogo em floresta), Jan, 2017

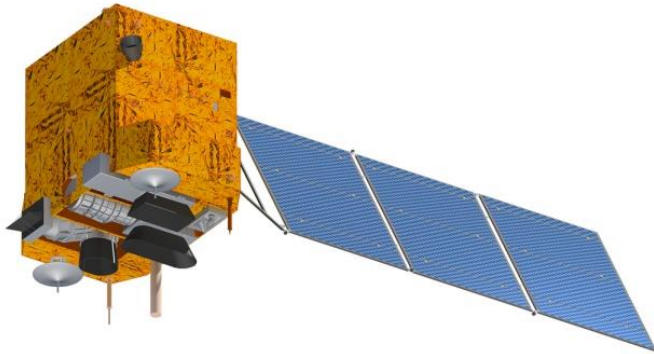
CBERS – Política Industrial



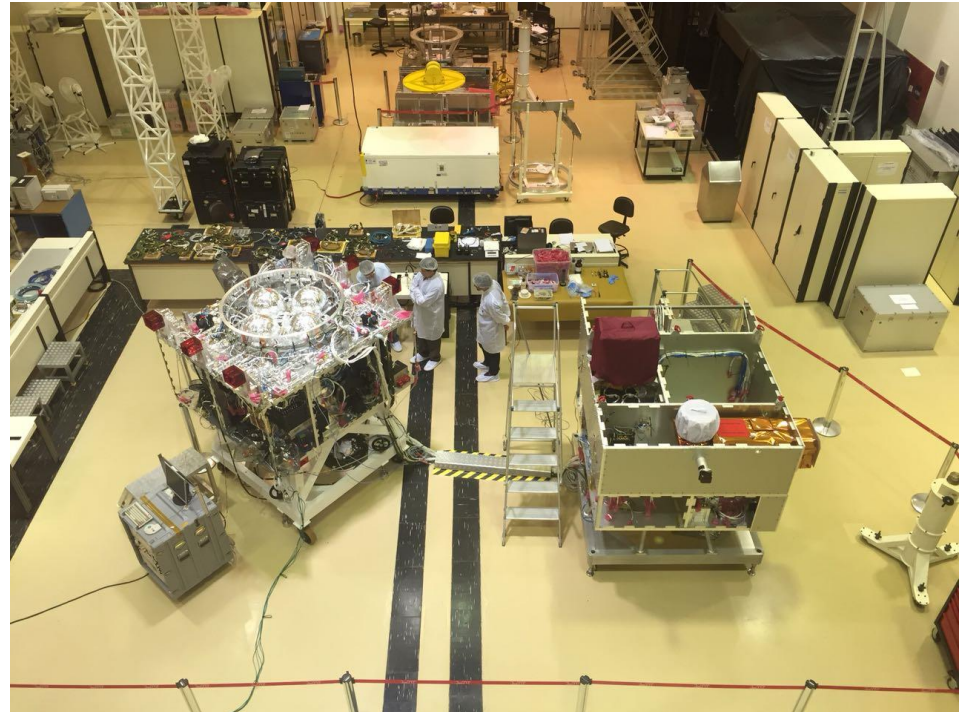
■ Brasil

■ China

CBERS-04A



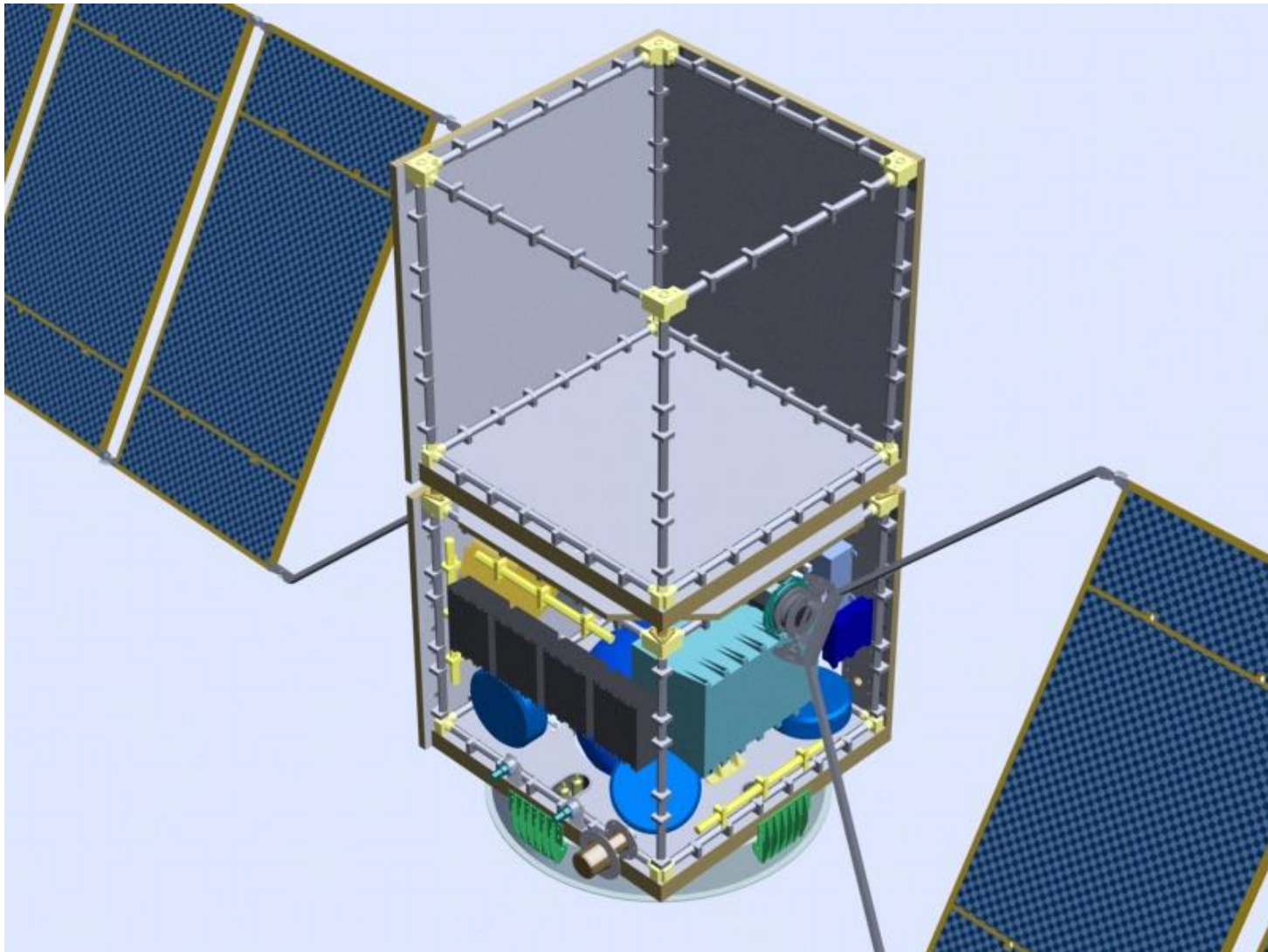
- Classe 2 toneladas
- Câmera chinesa: resolução de 2 e 8 m
- Câmeras brasileiras: resolução de 16 e 55 m
- Lançamento previsto para 1º semestre 2019, a partir de um foguete Longa Marcha 4B





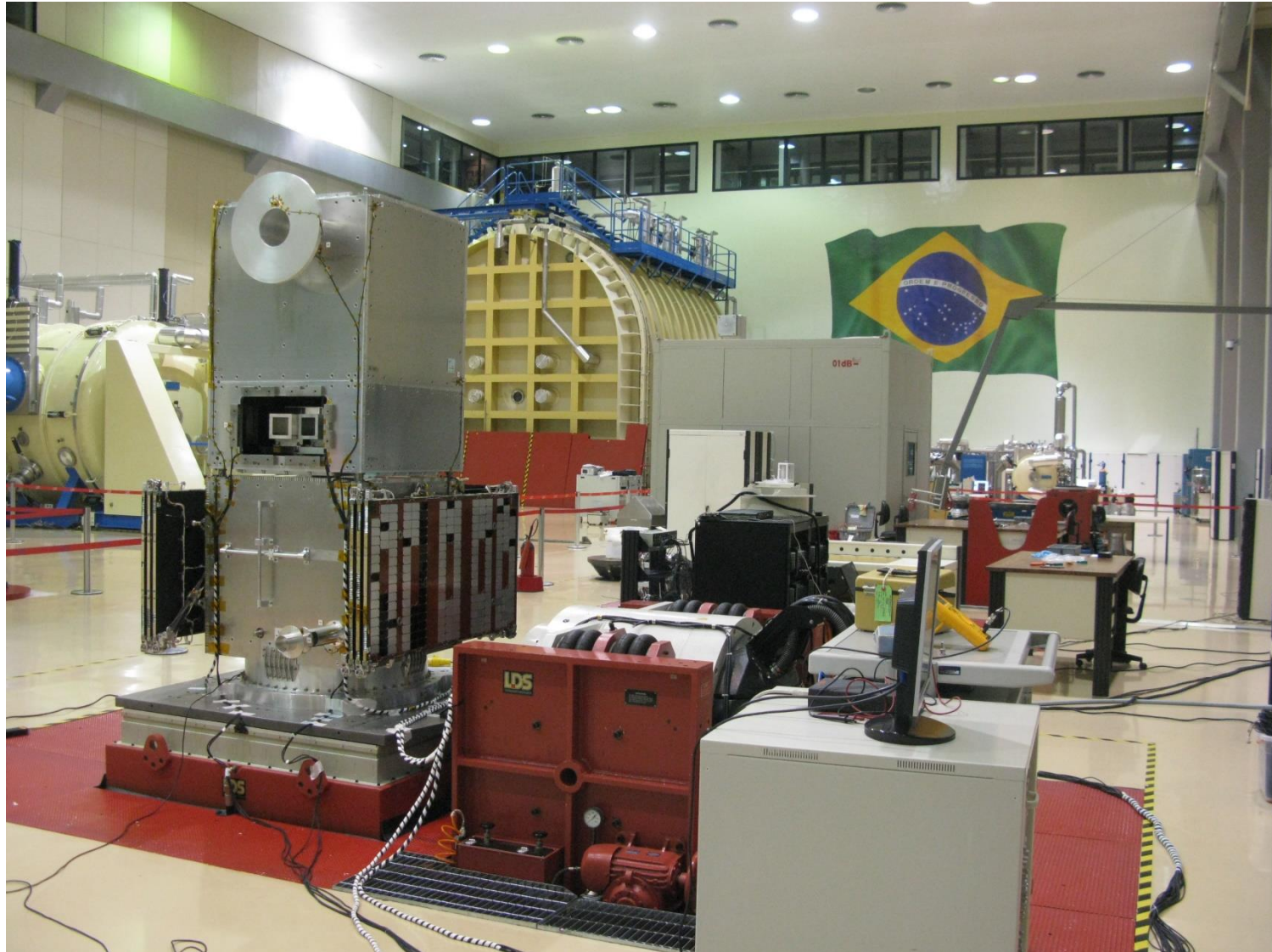
Programa Amazonia

Plataforma Multimissão - PMM



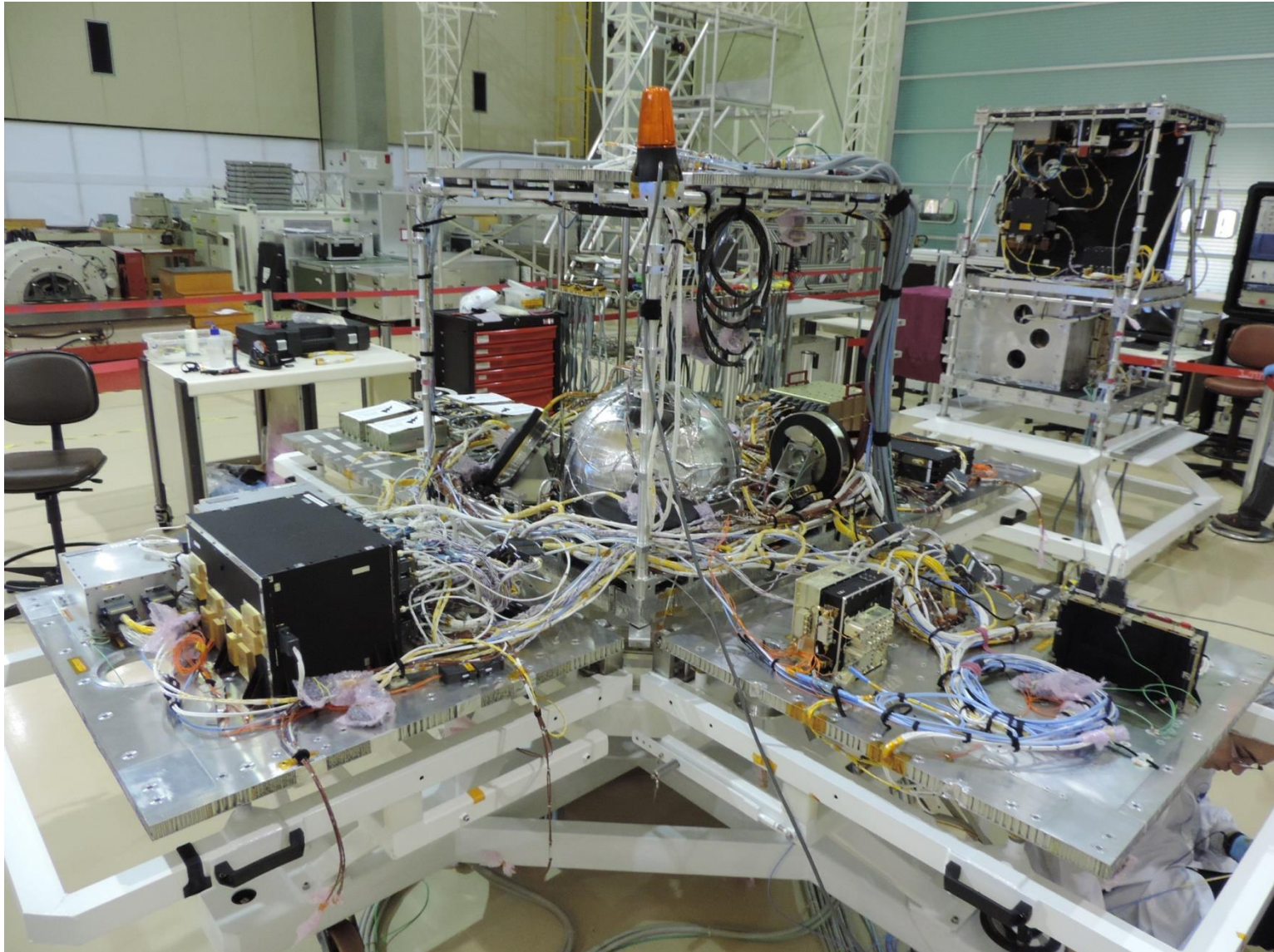


Maquete Estrutural

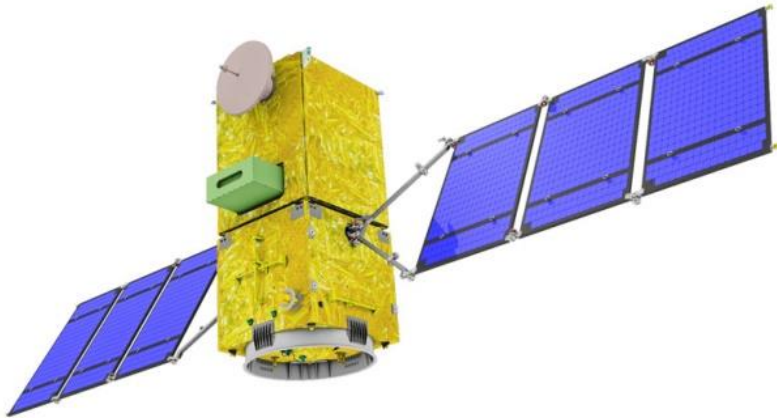




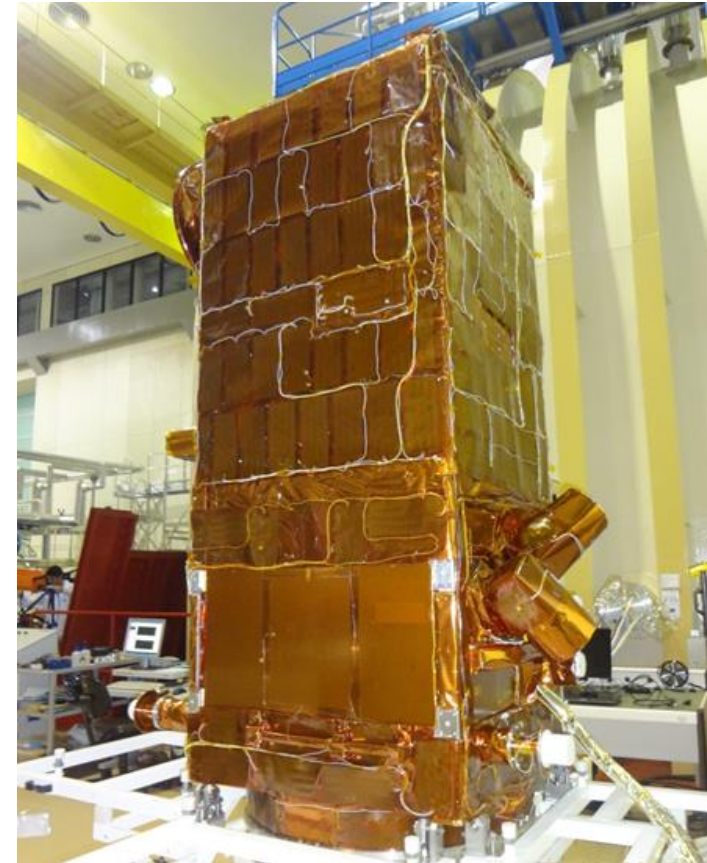
AMZ 1 - Integração



Amazonia 1



- Projeto nacional baseado na Plataforma Multimissão
- Classe 700 kg
- Imageamento: 62 m / 850 km
- Lançamento previsto para 2020



A photograph of the Earth rising over the horizon of the Moon. The Earth is a bright blue and white sphere, partially obscured by the dark, cratered surface of the Moon. The sky is black.

**Obrigado e
aproveitem o curso !**