Finnish Space Industry Days
5th of April 2019

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WE MAKE OUR CUSTOMERS SMARTER AND SAFER

SSF_

- FOUNDED IN 1989
- 80+ STAFF, TURNOVER 7.5 M€ (2017)
- OFFICES IN ESPOO, FINLAND and PRAGUE, CZECH REPUBLIC
- PRIVATELY HELD FINNISH COMPANY
- ISO 9001 AND ISO 13485 CERTIFIED QUALITY MANAGEMENT SYSTEM

SSF


SPACE SOFTWARE AND
SYSTEMS WITH 30 YEARS
OF EXPERIENCE
SSF


esa
PHILIPS
sense and simplicity
MIPRO
ESO
SPACEBEL
HITACHI
VEGA
ORION
DIAGNOSTICA
EUMETSAT
gmv
FUSION
FOR
ENERGY
ThalesAlenia
Space
AIRBUS
AN EADS COMPANY
Vivago
OHB
SYSTEM
An OHB Technology Company
FINNISH GEODETIC
INSTITUTE
spectracom
Synchronizing Critical Operations
NASA
EKE
ELECTRONICS
deimos
SPACE
Palodex
Group
STUK
Säteilyturvakeskus
tellabs
TERMA
BIOHIT
Innovating for Health
UNIVERSITY OF HELSINKI
VTT
FINNISH METEOROLOGICAL INSTITUTE
KNMI
VAISALA
Patria
AKE
TAMPERE UNIVERSITY
OF TECHNOLOGY
COMPTEL
Aalto University

Space Applications

Onboard Software

Ground Processing

ISVV

Test Software & Simulations

Development & Validation Services

ON-BOARD SOFTWARE DEVELOPMENT

There are 17 launched satellites carrying software designed or verified by SSF and 15 under work or waiting to be launched

SSF

GOCE PASW
(Airbus DS)

- SSF has developed the Platform Application Software (PASW) for ESA's Gravity and Ocean Circulation Explorer (GOCE) satellite
- Includes unique and complex attitude control system called Drag-Free Attitude Control (DFAC)
- SW Criticality Cat B

Herschel-Planck ASW
(Thales)

- Central Computer Application SW development for 2 twin satellites
- SW Criticality Category B

MetOp-SG ROIC SW
(RUAG)

- ROIC SW provides the Radio Occultation function and the Instrument Control function of the RO instrument
- SSF is also responsible of MetOp-GPP-A SW, the Ground Processor Prototype

METOP CSW
(Airbus DS)

Galileo ASW
(Airbus DS)

GAIA CSW
(Airbus DS)

MTG FCI/IRS SW
(Thales)

- Flexible Combined Imager SW & Infrared Sounder Application SW
- Development and maintenance
- Lifetime 20 years

ExoMars Recovery SW Image (RSI)
(Airbus DS)

- SSF develops the ultimate back up software which provides basic functionality to the ground to investigate and maintain the Rover Vehicle Software
- SW Criticality Category B

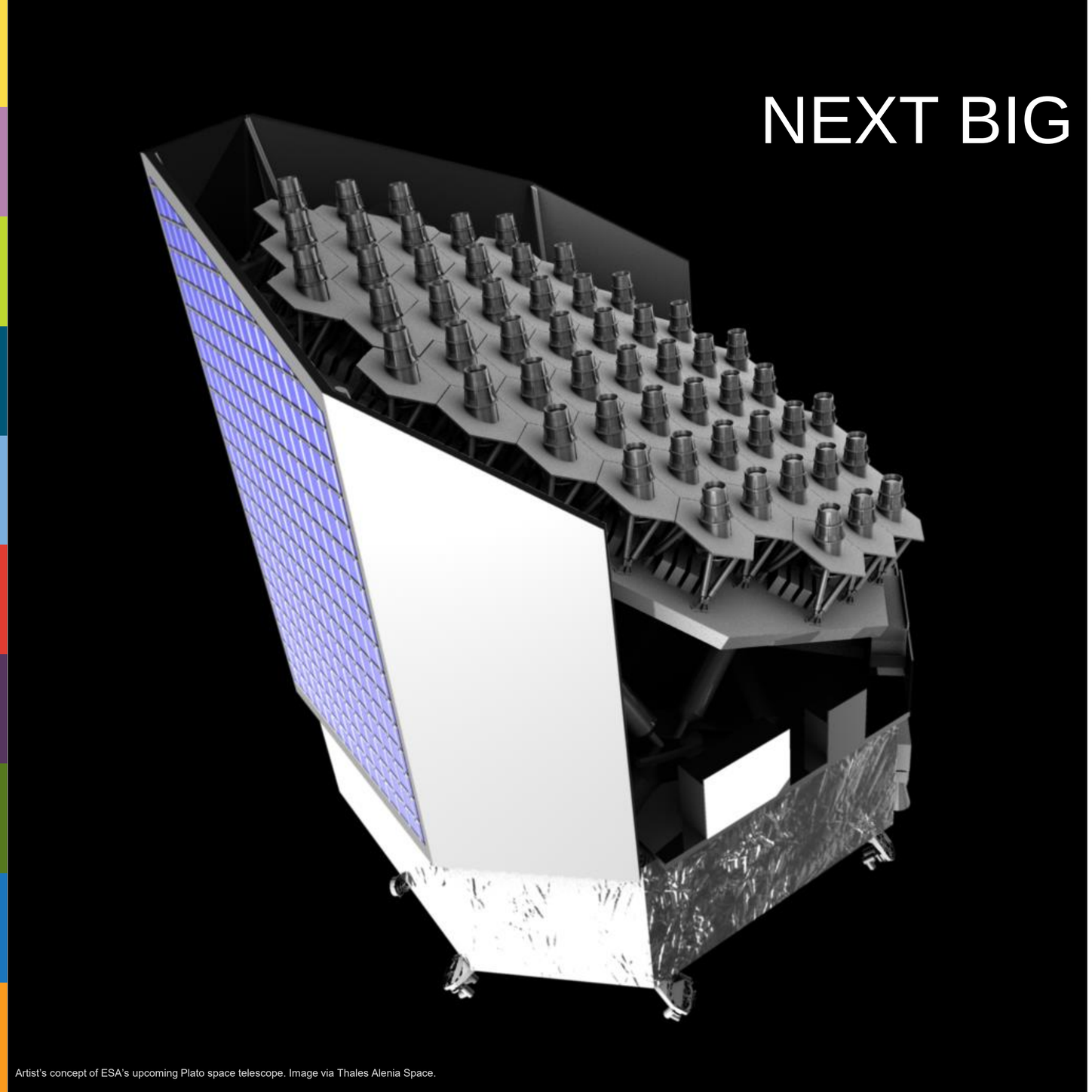
Sentinel-4 UVN ASW
(Airbus DS)

- SSF has developed the S4-UVN (UV/Visible/Near-Infrared) instrument control unit application SW

BepiColombo ASW
(UK+FIN + Airbus)

- SIXS/MIXS ASW
- Development and maintenance
- Lifetime 10+ years
- Project span 20+ years
- OBSW OBCP
- OBSW ISVV

NEXT BIG THING



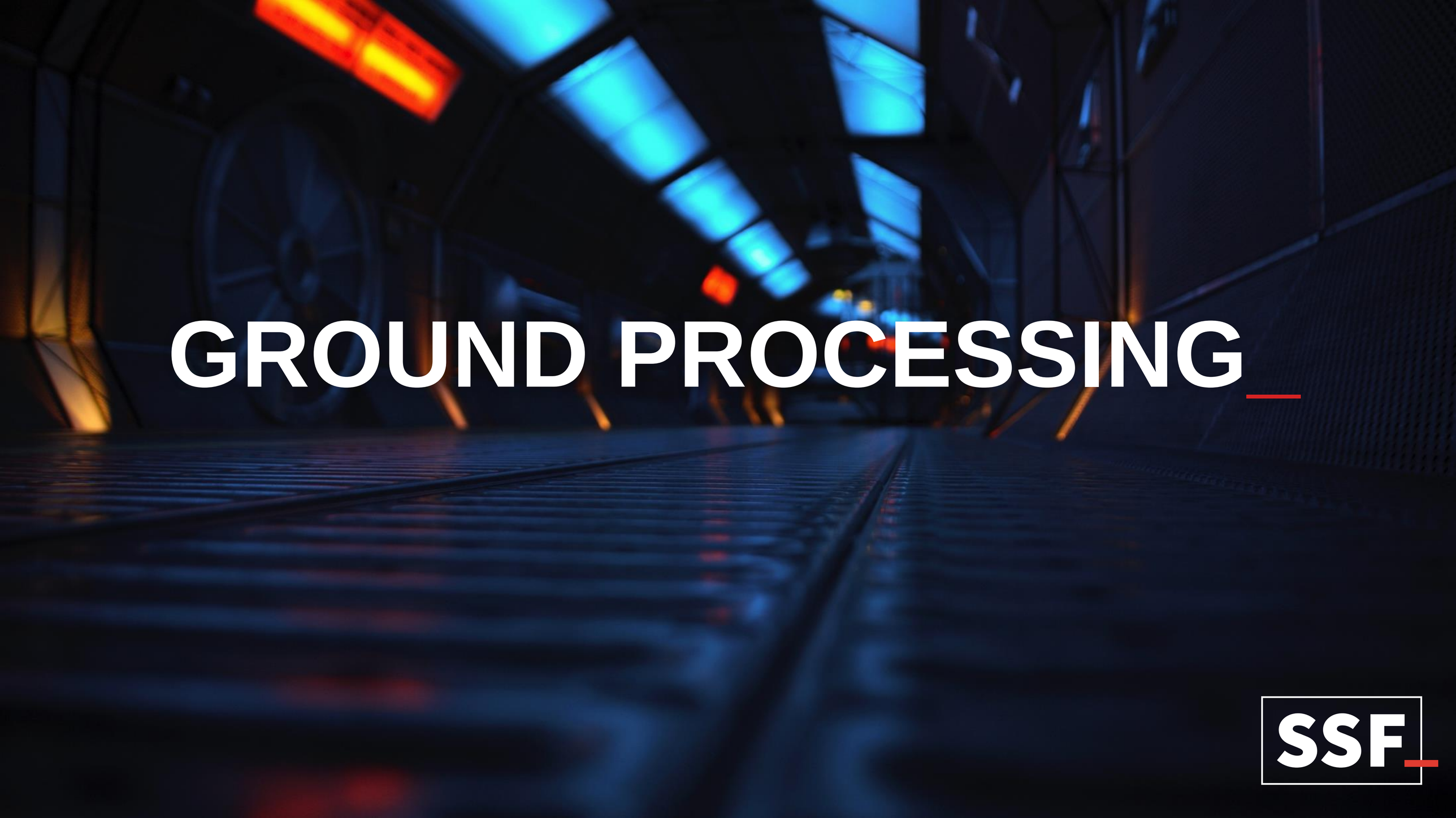
Artist's concept of ESA's upcoming Plato space telescope. Image via Thales Alenia Space.

plato

PLATO, the PLAnetary Transits and Oscillations of stars mission, will be launched in 2026 to find and study exoplanets

SSF is the Spacecraft Software Prime in a consortium lead by OHB

SSF


GROUND PROCESSING_

Sentinel-4 UVN L1bPP
(Airbus DS)

- SSF has developed the Level 0-1b Prototype Processor (L1bPP) that processes the raw measurements into level 1b products

Sentinel-5 UVNS L1bPP
(Airbus DS)

- A nadir viewing push-broom spectrograph with a spectral range covering UV to short wave infrared
- SSF develops L1b prototype data processing software

MTG IQT (GMV Spain)

- Tool that allows the assessment of the geometrical and radiometric performances of the instruments on-board MTG I and S satellites

MTG L2PF
(Thales Services SAS)

- SSF is responsible in integrating the science data processing implemented with Algorithmic Processing Elements (APEs) provided by ESA's S4 consortium onto the L2PF platform provided by Thales Services

SSF


INDEPENDENT SOFTWARE
VERIFICATION & VALIDATION
SSF

It is all about EXCELLENCE

Independent Software Verification and Validation (ISVV) is an engineering practice intended to improve quality and reduce costs of a software product. It is also intended to reduce development risks by having an organisation independent of the software developer's perform verification and validation of the specifications and code of a software product.

- Galileo ISVV:

  SSF was responsible for the ISVV of five major units:

  - Navigation Signal Generator Unit
  - Platform and payload Security Unit
  - Message Generation Facility
  - Integrity Processing Facility and
  - Mission Support Facility

- BepiColombo ISVV
- Small-GEO ISV
- EDRS-C ISVV
- MTG STR ISVV
- MTG SMU ISVV
- Jason (Sentinel-6) ISVV
- BIOMASS ISVV (started)

EXCEPTIONALLY HIGHLY EDUCATED AND EXPERIENCED PEOPLE_

Over 400 working years’ experience in international space projects


“SSF ALWAYS SAYS YES AND EVERYTHING IS EASY. THEY DON’T PUSH BACK.”
Jack Adkins
GE Hitachi Nuclear
SSF


SSF