MARS-/EUROPA-INPPS FLAGSHIP MISSIONS: HIGH AND LOW POWER ELECTRIC THRUSTERS, ORBITS/PAYLOADS AND CO-FLYING SATELLITES

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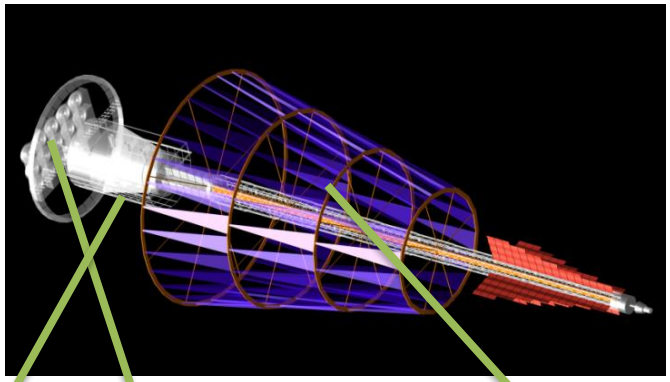
PLUS WORLDWIDE ET CONTIBUTORS!!!



MARS- and EUROPA-INPPS (International Nuclear Power and Propulsion System, 2021): cluster of electric thrusters (15-20), droplet radiators, payload basket- 20t MARS and 11t EUROPA!

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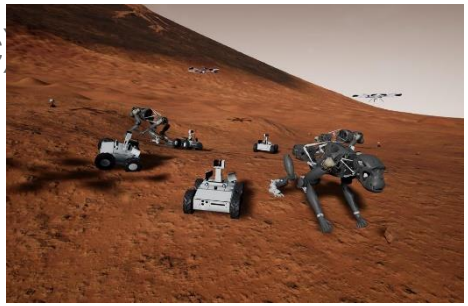
Summary Status European Russian INPPS Flagship and 20/21 status:

- Nuclear Electric Propulsion (DEMOCRITOS/MEGAHIT/DiPoP/TPM): Russian 1MWel core (+ China, UK, USA), European/Russian subsystems, contributions - Brazil, Japan and USA,
- 1992 UN principles: Nuclear Power Source in space – fulfilled (1000km, Timepix) and over-fulfilled (co-flying s/c)
- INPPS 100 t total mass,
  11-20 t (!) payload mass
  - **CANDIDATEs: Mars - VaMEx** (Valles Marineris Explorer),
    Europa – TRIPLE (ice melting probe)
  - **INVITATIONs: scientific (COSPAR), commercial, communication**
- droplet radiators, **orbit calculations &cluster (!) of electric thrusters (15-20!)**



International INPPS Flagship missions in interplanetary space:

1. Mission - **Non-Human** INPPS Flagship (with only one Flagship): about **2028 – 2034 Earth->Mars->Earth** plus **Earth->Jupiter/Europa**
2. Mission - **Human** INPPS Flagship (with the second Flagship): after **2034 Earth->Mars->Earth**

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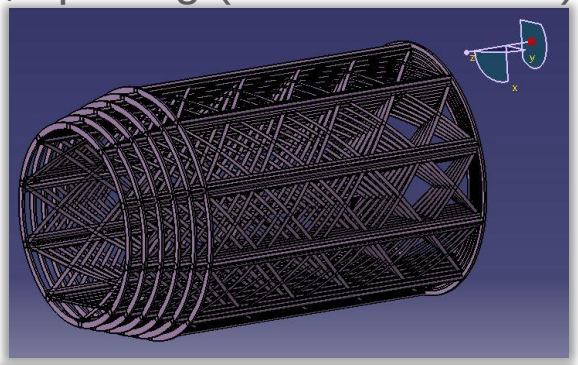
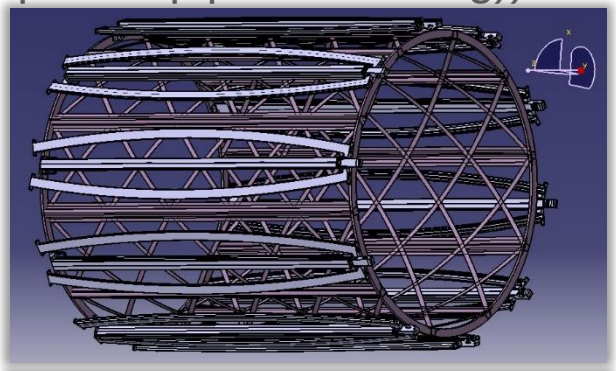
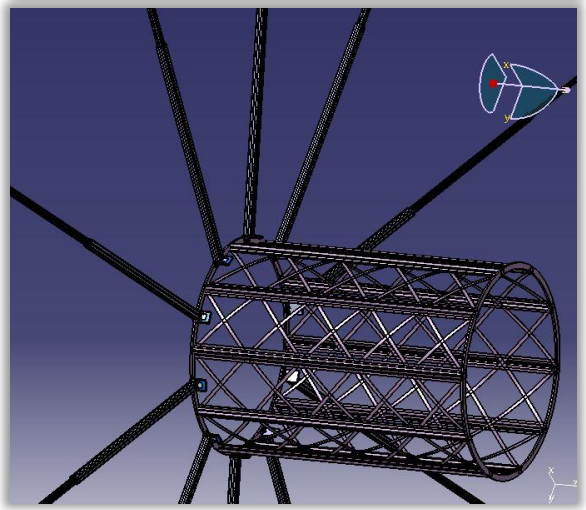
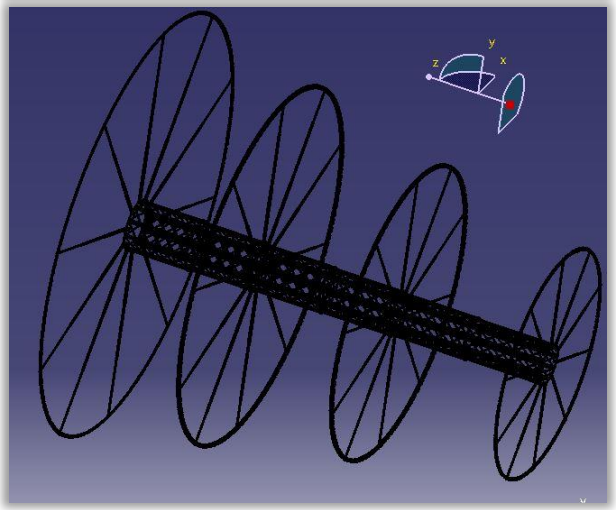
2020/2021 Status Droplet Radiators, Orbit Calculations, Electric Thrusters Cluster:

Droplet Radiators Result: mechanical details of DLR Boom + Russian droplet radiators (assembly, opening (boom / stiffener), droplets path & pipes mounting))









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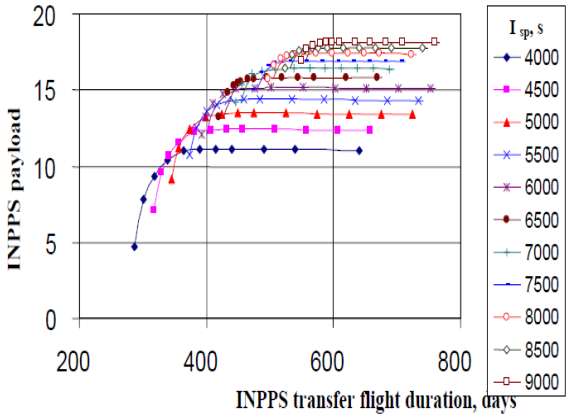
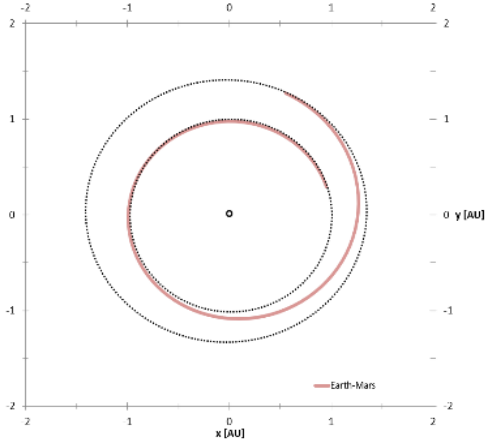
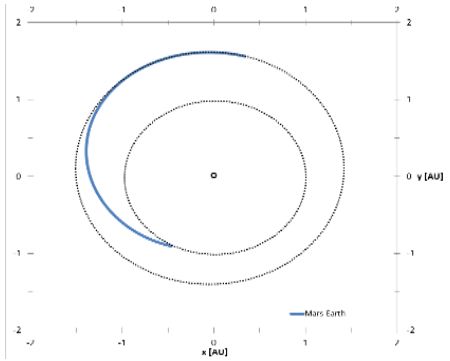
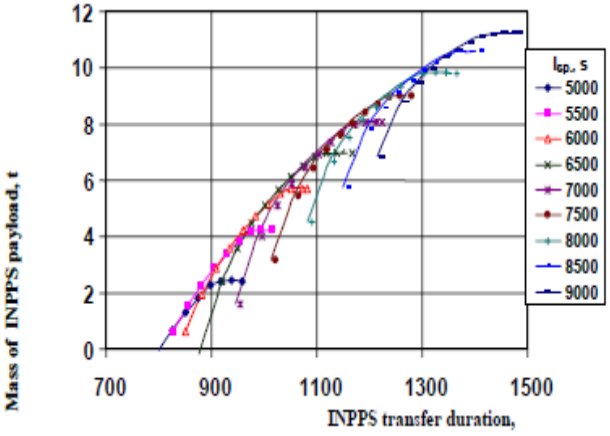
2020/2021 Status Orbit Calculations and Cluster of Electric Thrusters (ET's with >20 (!))

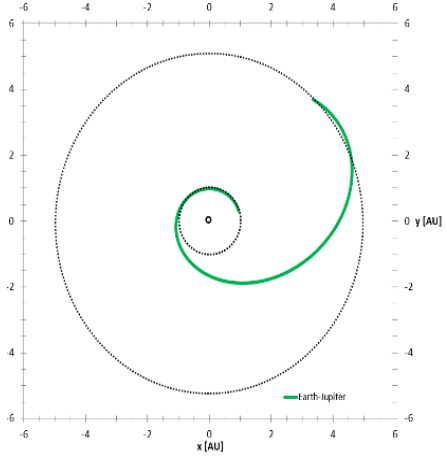
ET results (DEMOCRITOS), orbit calculations (2026…)











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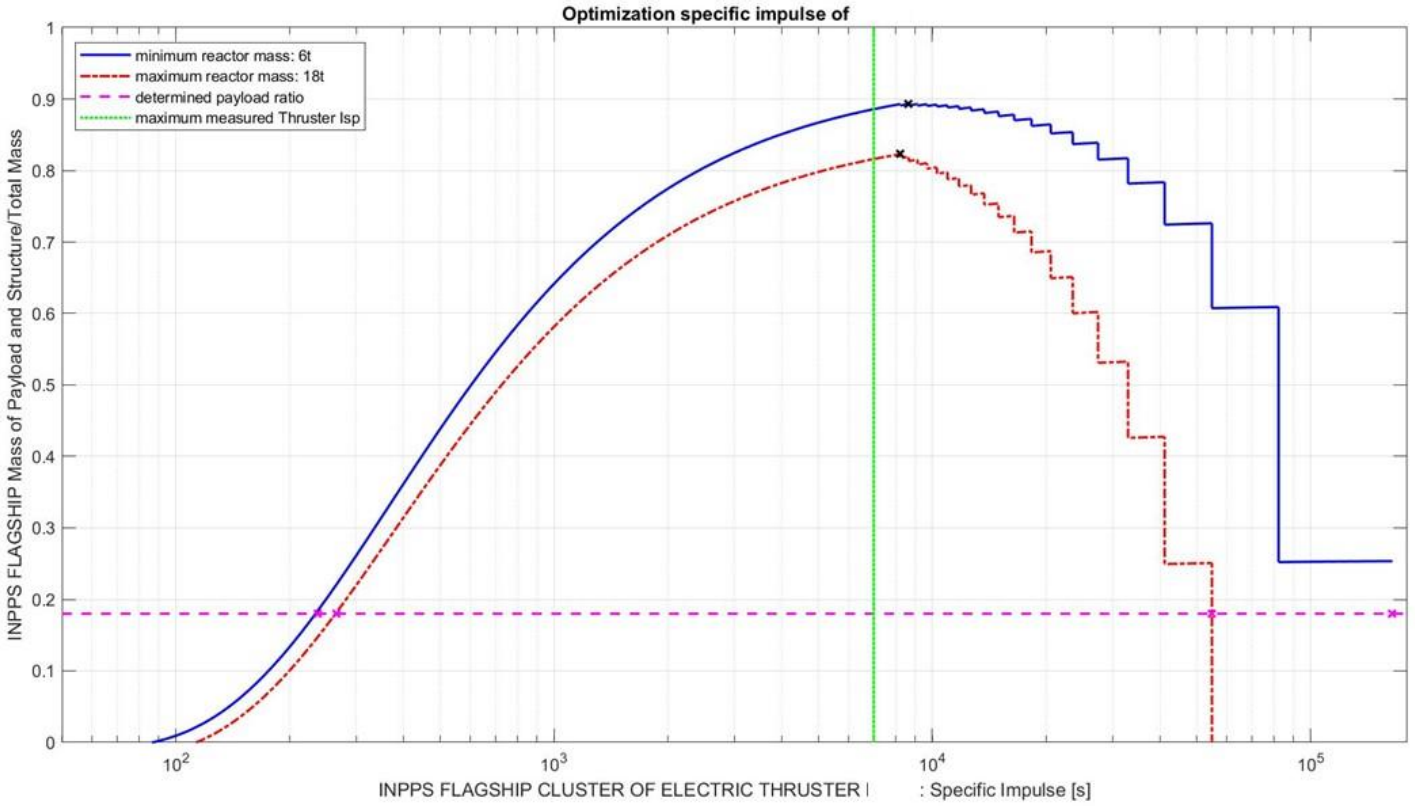
2020/2021 Status Orbit Calculations and Cluster of Electric Thrusters (ET's with >20 (!))

CET: first example results, example: Earth to Mars, 1 ET example



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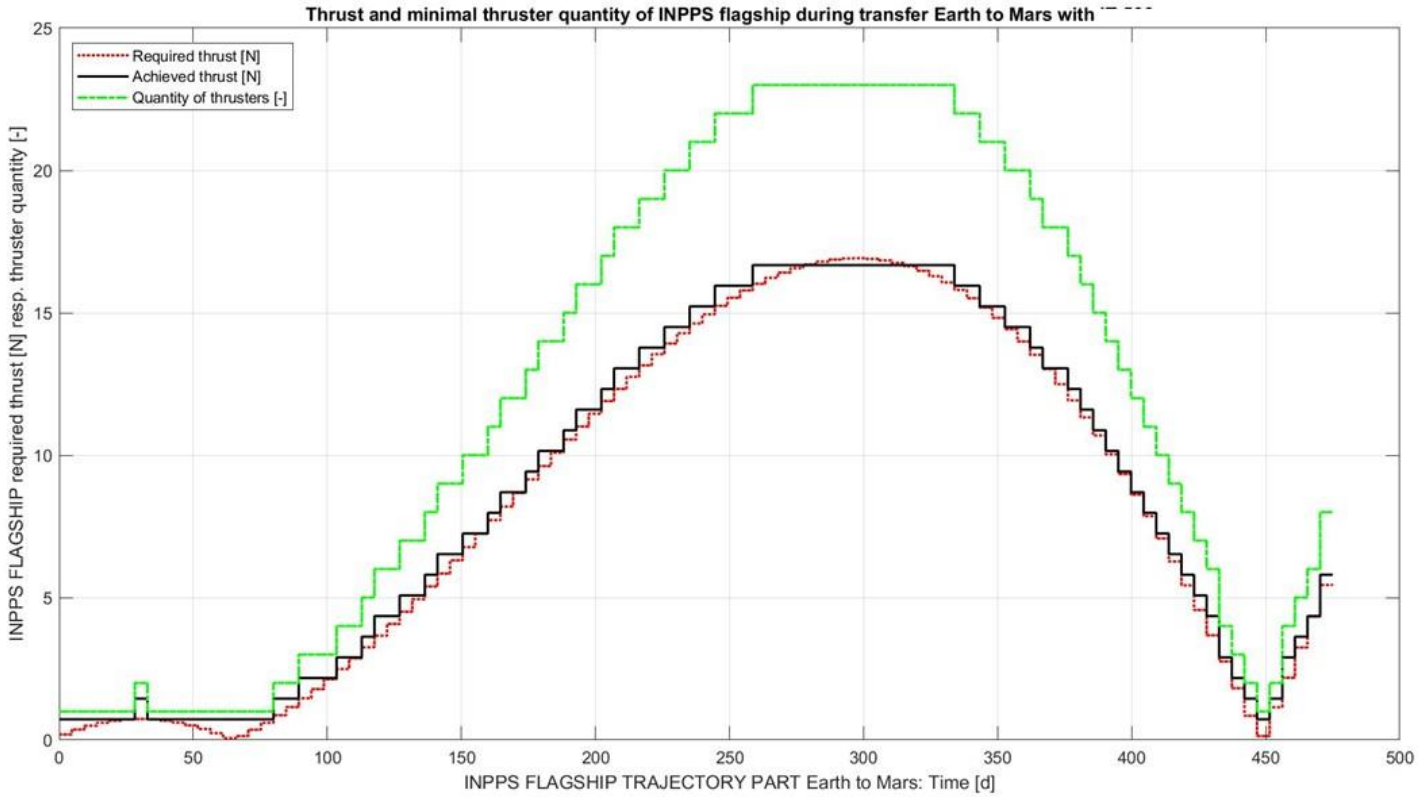

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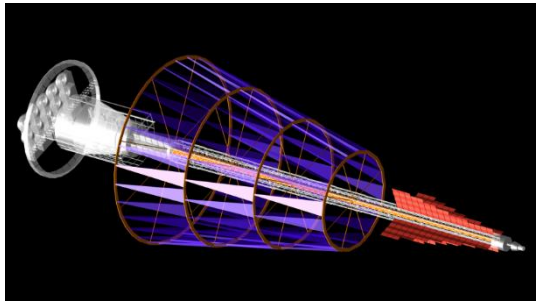

Mars- and Europa-INPPS Flagship.

Main Conclusion:

IT IS NOW CALCULATED - FEASIBILITY OF HUMAN & NON-HUMAN MARS-/EUROPA INPPS WITH INTERNATIONAL ET's (EP only, no chemical propulsion is needed) in FLAGSHIP ET CLUSTER IS REACHABLE!

Remark: Final Results CET + INPPS Flagship +
UN NPS => Cologne Commentary on Space Law => **GLEX June 2021 St. Petersburg**

Invitation related to all ET subsystems – worldwide!

NEW SPACE TECHNOLOGY plus SPACE SCIENCE for DEEP SPACE EXPLORATION.
NEW SPACE ECONOMY for EARTH SOCIAL DEVELOPMENT with FRONTIER MENTALITY.
IF WE WISH - YES, WE CAN – HUMANS INTERNATIONALLY TO MARS!

Contact: frank.Jansen@dlr.de and co-authors

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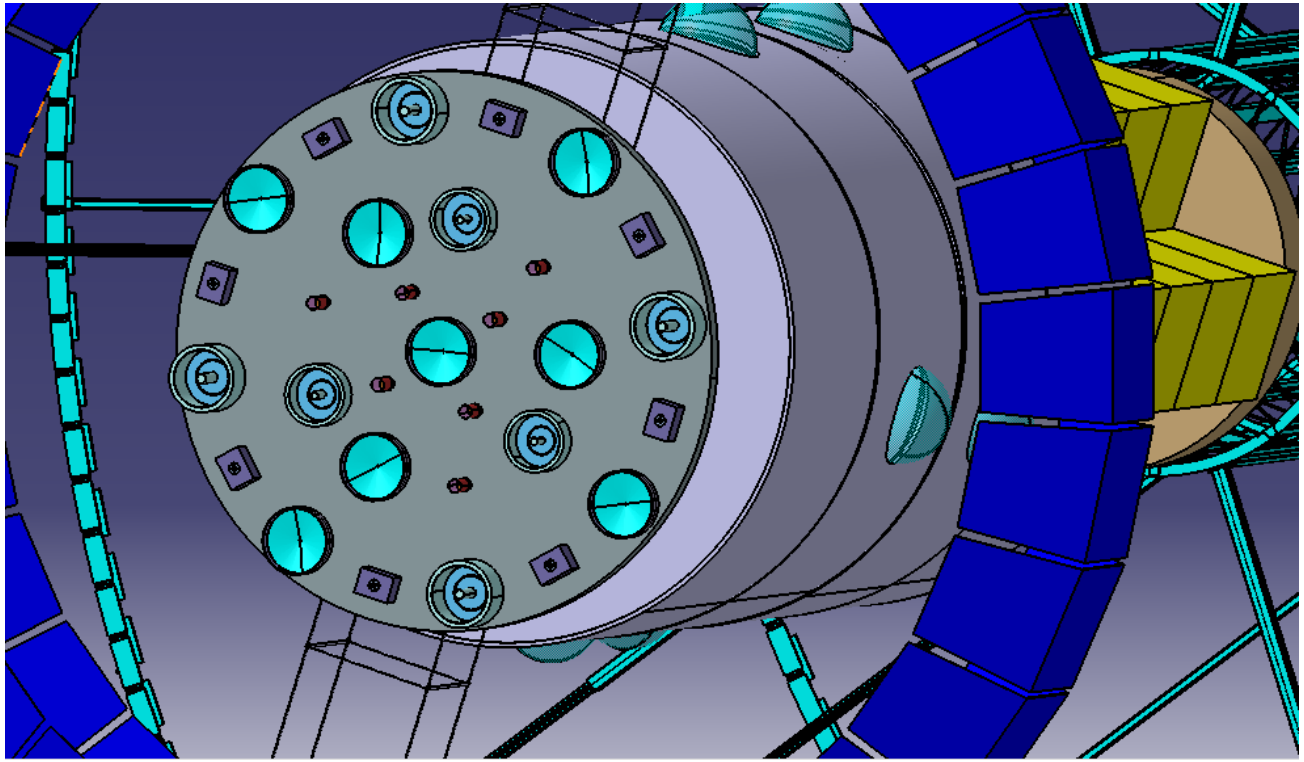

First image
of CET plate example on INPPS.

LET US FLY INTERNATIONNALY NUCLEAR ELECTRIC WITH FUTURISTIC ION PROPULSION (FOR AND) WITH HUMANS & NON-HUMAN TO PLANET MARS AND WATER ABUNDANT EUROPA MOON!

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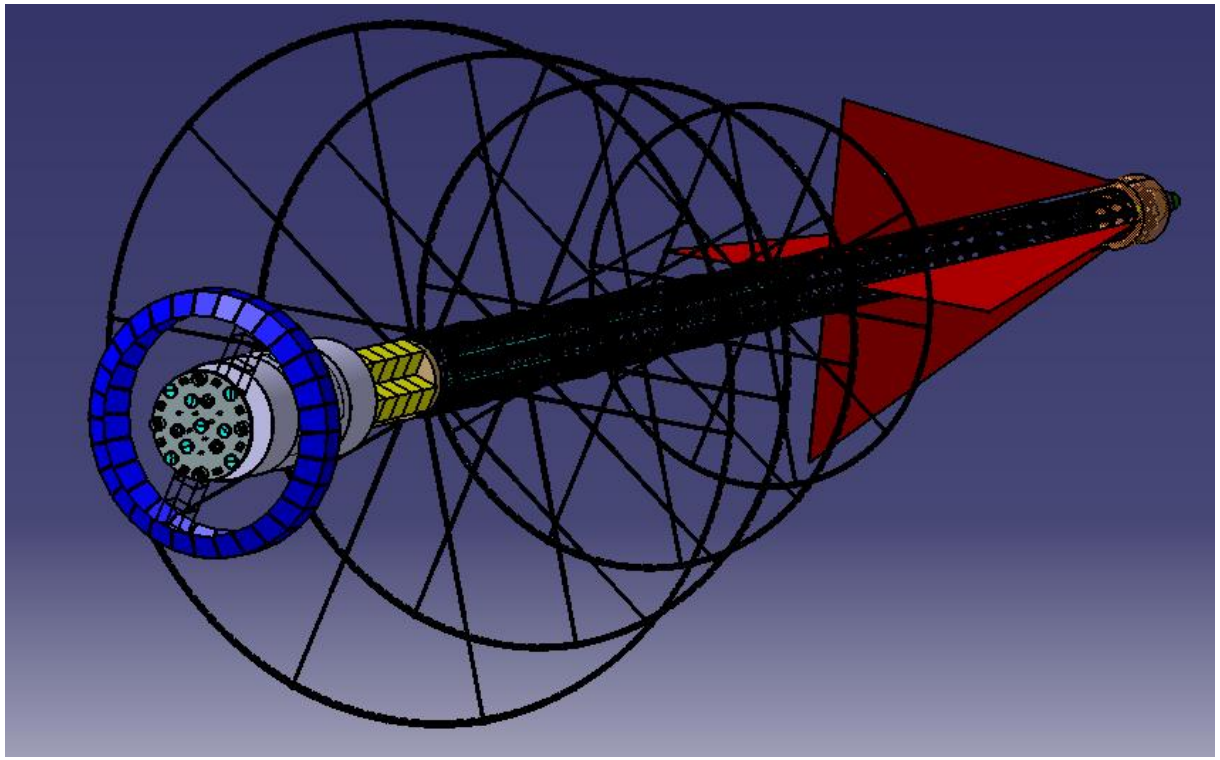

First image
of CET plate example on entire INPPS.

LET US FLY INTERNATIONNALY NUCLEAR ELECTRIC
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HUMANS & NON-HUMAN TO PLANET MARS AND WATER ABUNDANT EUROPA MOON!

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