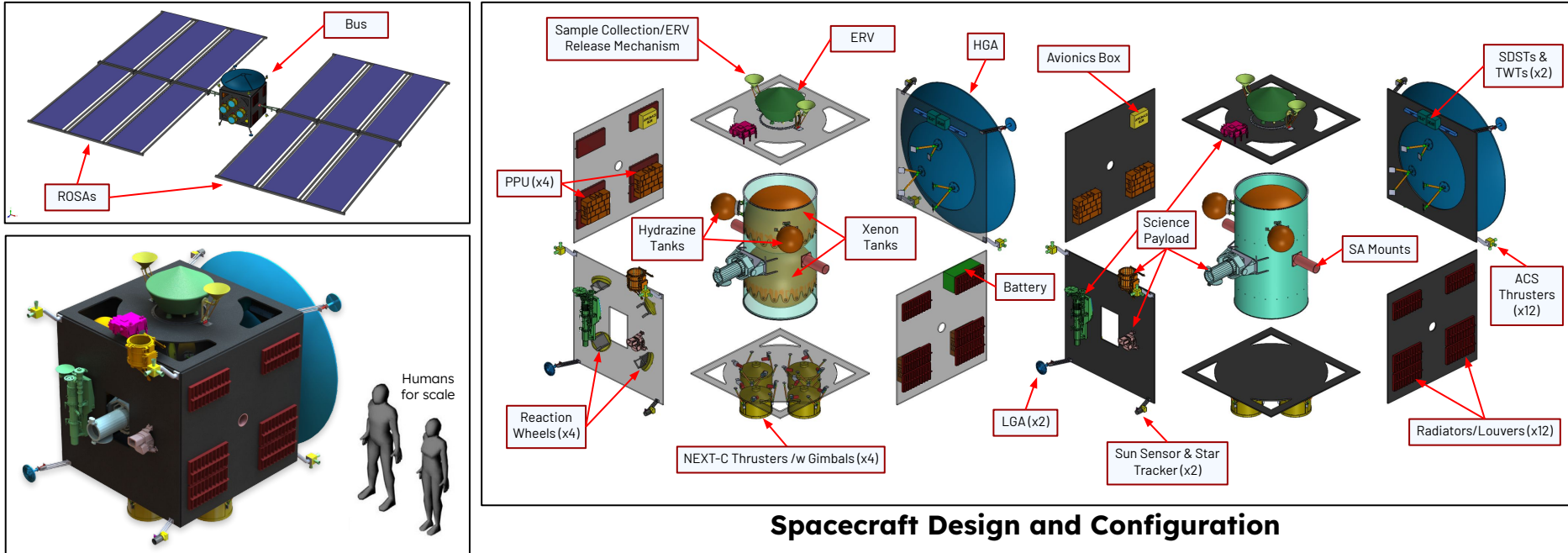


# Erik Kramer | Mock Europa Sample Return Mission

**Project** → A pre-Phase A Europa sample return mission proposal with details for all subsystems

**Tasks** → Design of **structures** subsystem, **CAD** of all spacecraft components/configurations, **systems engineering** work



# Erik Kramer | Mock Europa Sample Return Mission

## Objectives

- Develop a proposal, including all spacecraft subsystems, to return a water plume sample from Europa
- Launch within 2030-2033 and have a mission duration of 10-12 years

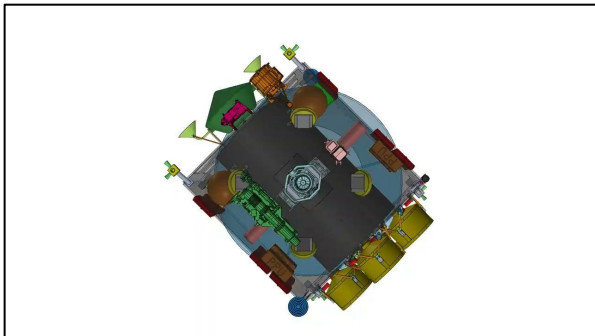
## Process

- Used **SolidWorks** to design and model 100+ spacecraft components
- Tracked parts list, mass, and power through linked design spreadsheets, **MEL** and **PEL**
- Assisted other subsystems with **design iterations** and **trade studies**

## Results

- Produced a comprehensive SEP mission concept, including spacecraft design, that satisfies all level 1 to 3 requirements and lasts 11.14 years
- Collaborated to produce a 130 page report documenting the design and mission proposal

[Click](#) for Transparent Bus Rotation Animation



[Click](#) for Design Spreadsheet Example

A screenshot of a complex design spreadsheet titled "STRUCTURES & MECHANISMS DESIGN SPREADSHEET". The spreadsheet is organized into multiple sections, including "STRUCTURES", "MECHANISMS", and "ELECTRICAL". It contains numerous columns for part numbers, descriptions, quantities, and various engineering parameters. The data is presented in a structured, tabular format, typical of a professional design tool like SolidWorks.

[Click](#) for Solar Array Deployment Animation

