

# SLEGO™ Architecture Enabled Missions

## Who is NovaWurks?

- Founded 2011 in Los Alamitos CA; out of stealth 2019
- Large facilities for engineering, simulation, digital twins, labs, High Bays, HWIL, 3-D printing and ISO 5&8 clean room spaces
- Staffed by professionals and New Space go getters, eager to learn and change our world for the better.
- Three test flights to date (ISS, GTO, and LEO)
- Three Rapid Ground I&T Demonstrations
  - SLEGO™ building blocks were reconfigured 3 times to accommodate different payloads, each within 1 week
- Ongoing commercial and government missions
- Operational Missions in 2024 for TRL 9

## Sensorcraft – All Orbits

- Any payload accommodated with a “right sized” bus
- Building blocks connected to aggregate performance as a PAC (Payload Accommodation Configuration)
  - Payload Centric
  - Integrated with Payloads; adapts to Launch Vehicle
  - Bus is a configuration, low NRE, not design
  - Soft Ride built-in capability for Payload
  - 3-axis control, ultra-low-jitter, <0.01 deg pointing
  - Multiple payload ride-share capability
- Streamlined Integration and Test
- The SLEGO™ Building Block provides all needed support:
  - Sun sensors, star trackers, accelerometers, gyros
  - PAC processing, data handling, storage, metrology
  - Momentum dumping thrusters
  - SSA sensors – Visual, IR and LIDAR
- **Demonstrated on orbit on Rideshare mission**
  - eXCITE was built on ground and launched on ESPA

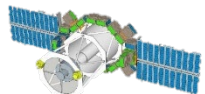
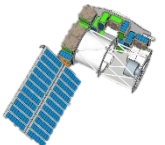
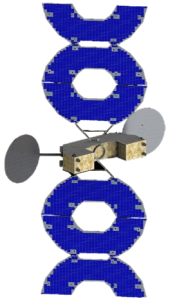
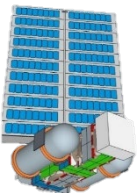
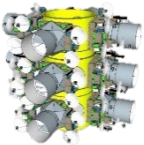
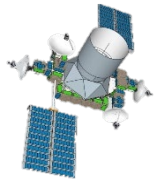
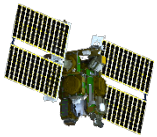
## GEO/Cis-L Communications

- GEO designed, cis-lunar and all orbit capable
- Communications with scalable capabilities
  - Payload mass up to 2000kg
  - >7KW power possible
  - Data storage up to 10TB and more
  - High speed comms (RF and/or optical)
  - Delta-V for orbit transfer & orbit station keeping
- High Performance Bus can be built in months, not years
- Resiliency with up to 15-year life
  - n of m improvement from “primary/redundant”
- True Software defined Spacecraft Bus
  - “APP” for Payload
- Cost reduction
  - Mass produced, driving quality and cost efficiencies
- Demonstrated EMI/EMC features
  - **Demonstrated on orbit in GTO Mission**
    - PODSAT-1 demonstrated space environment capability

## On-Orbit Assembly

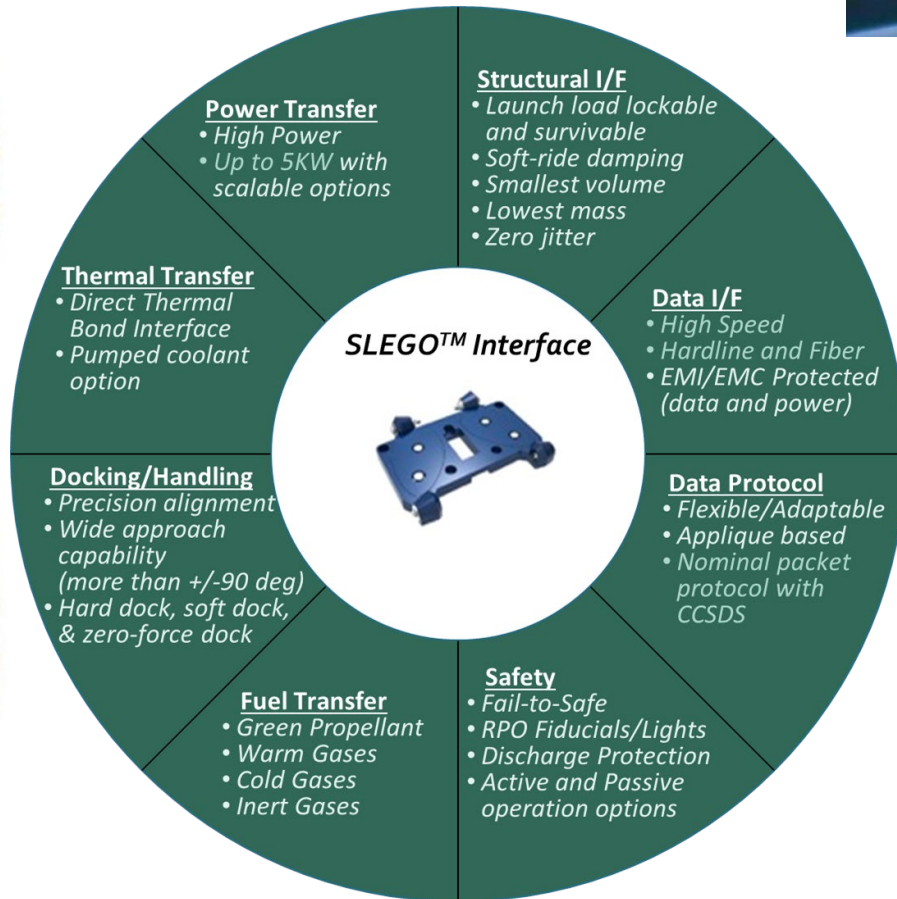
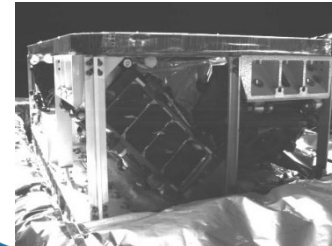
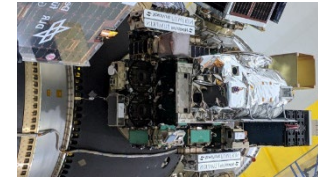
- Designed for Robotic Handling on ground or on orbit
- Open-source Simplified Interface – Plug-n-Play
  - Share power, fuel, data, and thermal
- ISAM Capability available in everything SLEGO™
- Late life cycle changes accommodated by the configurable architecture and software
- TRL 7/8 – Flight tested on-orbit demonstrations
- **Demonstrated on orbit aboard ISS**
  - SIMPL was assembled inside the ISS by Astronauts
  - First in-space on-orbit assembly of fully capable spacecraft from 8 individually delivered modules
  - First non-air based propulsion system fully-qualified for ISS both inside (IVA) and outside (EVA)

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# Next Generation SLEGO™ Architecture

- SLEGO™ architecture utilizes tested and flight proven GEO design heritage performance



NovaWurks offers spacecraft that are configurable on demand. Our space LEGO™ like suite of products enable cost-effective payload support with rapid assembly, reconfiguration and repair capabilities, integrating in hours instead of months. NovaWurks' SLEGO™ elements provide flexibility, security, and enhanced space domain awareness so you can operate your space assets with confidence.