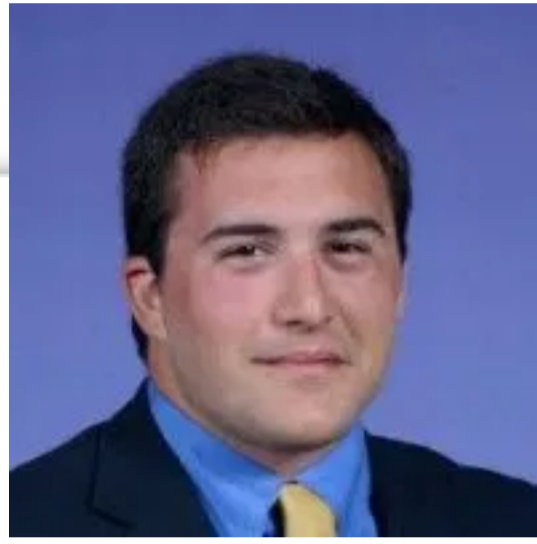


## RAPID (Rapid Assembly Production & Integration Deployment satellite system)



Structures Unlimited of Rockledge, Florida, has designed a mission platform that will serve significantly to accelerate the deployment of a variety of low-earth orbit (LEO) satellite missions. The ultimate objective of the project is to deliver a uniform, streamlined platform, likely available in several sizes, into which a variety of payloads can efficiently and expediently be integrated, thereby reducing the lead time for preparing satellite missions from months to days or even hours.



**Aleks Bologna, M.B.A**  
PRESIDENT

Aleks Bologna acts as Structures Unlimited President. Prior to joining Structures Unlimited, Aleks worked for Helical Communication Technologies as an Operations Officer as a Program Manager for other aerospace firms. Aleks earned his B.S from Florida State University and his M.B.A from the University of Florida.



**Dipen Italiya**  
VICE-PRESIDENT

A highly motivated Aerospace/Mechanical Engineer with a keen interest in product designing, flight dynamics, system engineering, and aerodynamics.

E: dipen@Structuresemail.com

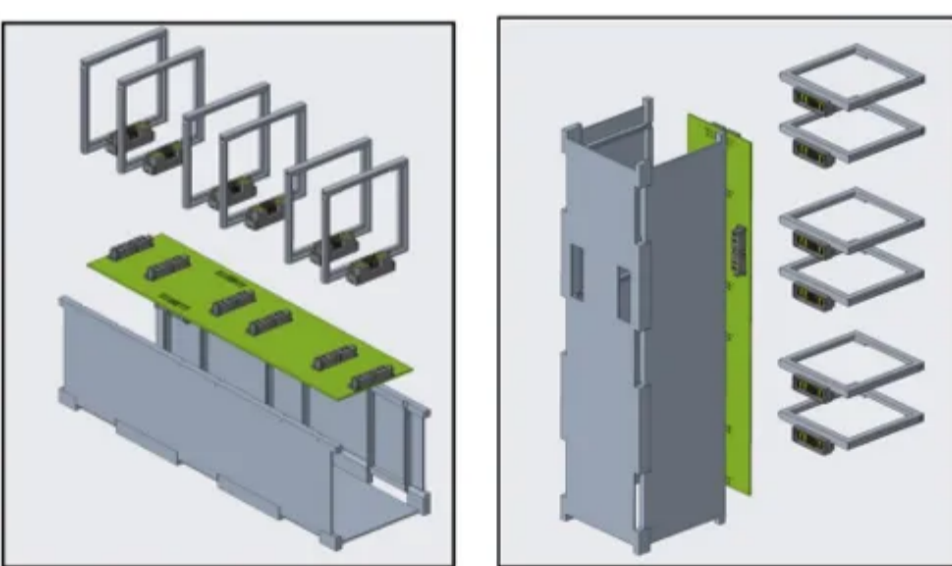
### Introduction

The heart of the Structures Unlimited solution is a unique folding chassis. The chassis is engineered to accommodate a variety of parallel payload modules that have been architected according to a uniform installation footprint. In this manner, the use of the chassis is analogous to the integration of consistently sized computing and networking equipment into a standard rack mounting. Unlike terrestrial rack-mounted systems, the chassis implements a unique groove and slot construction that ensures that constituent modules remain rigidly in position after they have initially been slid and snapped into place. In conjunction with a baseline software program which to integrate the sub-assembly's together this will

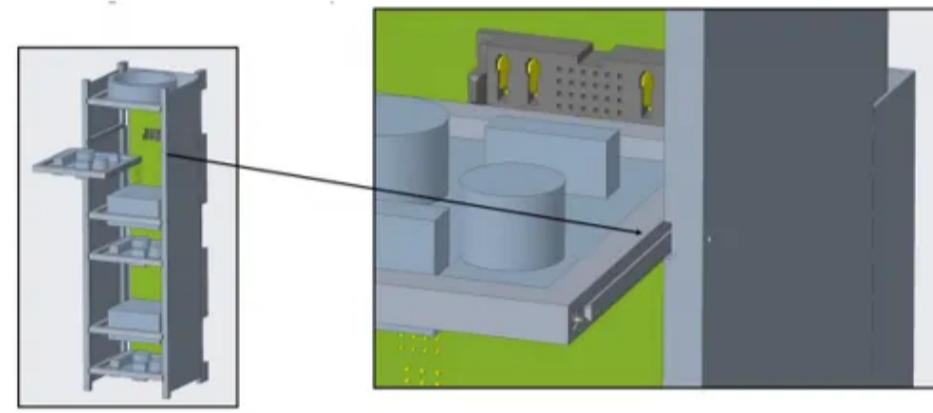
- Eliminate separate wire harnesses
- Allow for immediate deployment of satellite missions
- Reduce costs expended to consultants
- Allow for faster replacement of sub-assembly failures
- Easier pre-installation sub-assembly testing

### Technical

The chassis incorporates both power supply and signaling connections for each component, enabling them to be flexibly integrated into a variety of backplane configurations that support an attendant constellation of possible network architectures. A further critical design element of the Structures Unlimited chassis is its automatic incorporation of solar panels into its external surfaces. The advantage that this brings to bear is that, even in the absence of standalone power supply units that can additionally be integrated into the scheme, the chassis in its off-the-shelf configuration is available immediately to provide nominal levels of consistent power to the individual payload modules.

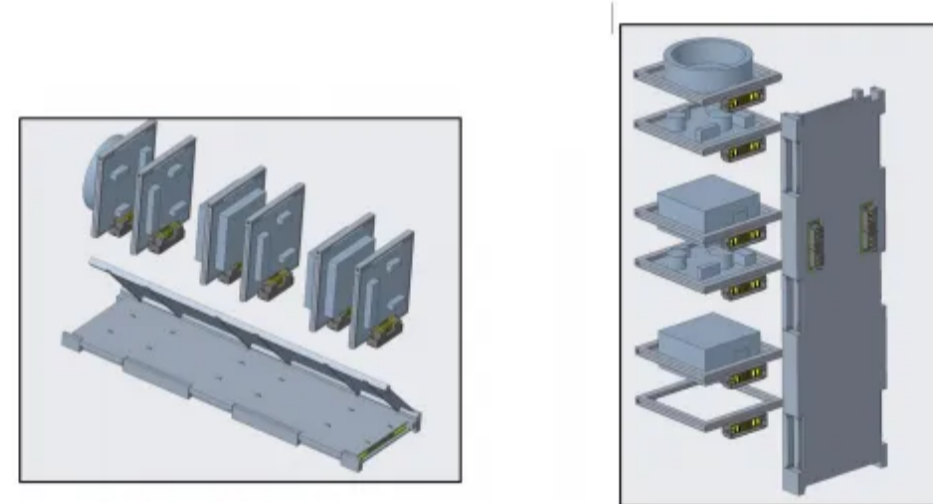


Chassis is opened with sub-assembly connections pre-wired for connection hook-up.

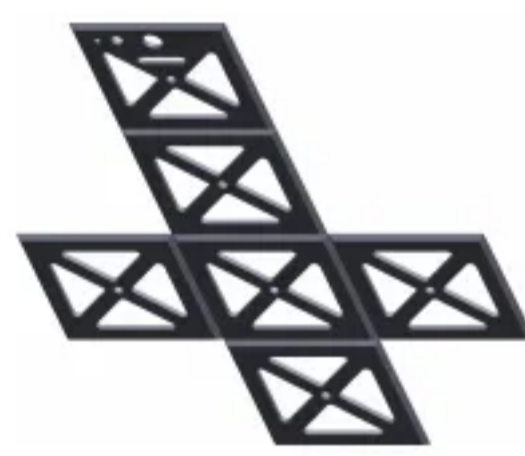


Inter-Locking groove and retaining device integral to each platform.

The design imposes no particular constraints upon the manner by which individual payload modules are coordinated and controlled. However, the flexibility of the power and signaling connections, made possible by the unique distribution of cabling and buses throughout the chassis, enables designers to achieve arbitrarily sophisticated platforms in which individual modules can be connected in parallel, daisy-chained, or even configured into temporally orthogonal groupings that are powered up and operated independently of other such groupings.



Folded into minimal size, chassis would take minimal space during transport and storage.



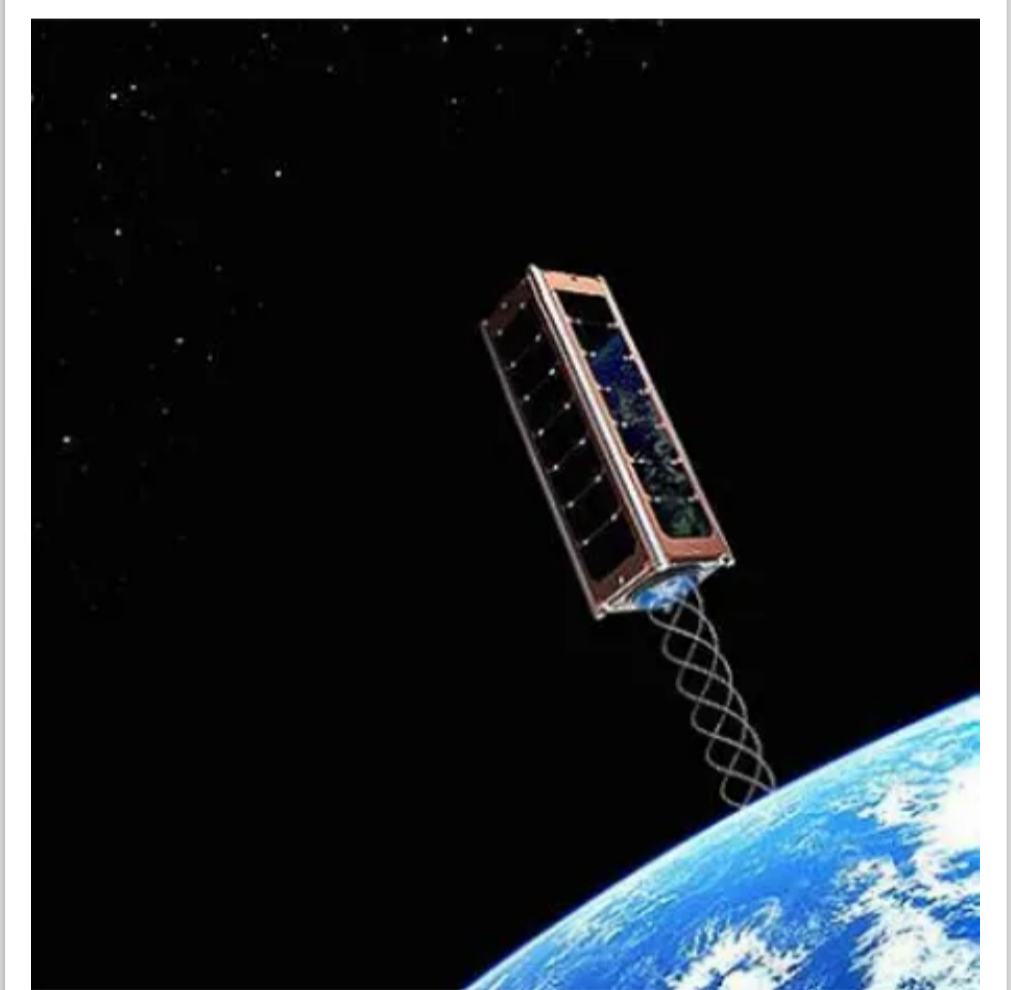
Isometric View of the Chassis

### Applications

Initial agreements have already been made with propulsion, radio and Helical Communication Technologies, the inventors' previous employer which manufactures satellite antennas, to design backplane integrated products. By creating products drastically easier to integrate, each sub-assembly company would be able to increase sales to more satellite teams by significantly reducing effort and cost expended by each team to allow for more mission critical team concentration. The overall theme of these sub-systems and chassis is to save set up time to achieve a common standard in deployable systems and create a rapid acting deployment method for defense and civilian purposes.



Deployable Antenna designed as a sub-assembly to integrate in minutes.



In order to take maximum advantage of the Structures Unlimited folding chassis, it will be necessary for the engineers who build payload modules to deliver those modules according to a specific, predefined geometric footprint. Discussions are already underway with firms that vend a variety of satellite systems to make the dream of automatically deployable, fully modularized craft a reality in the near term. We are extremely excited at the possibility of so playing a key role in the delivery of space systems that complement and interoperate with the coming array of orbital and interplanetary missions, both manned and unmanned.

### Point Of Contact



E: StructuresUnlimited1@gmail.com

O: (240) 532-2130



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