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**Contact:**  
Joseph Ramos  
505.845.8471  
jaramos@sandia.gov

# CARAVEL

## Mission Analysis and Data Exploitation

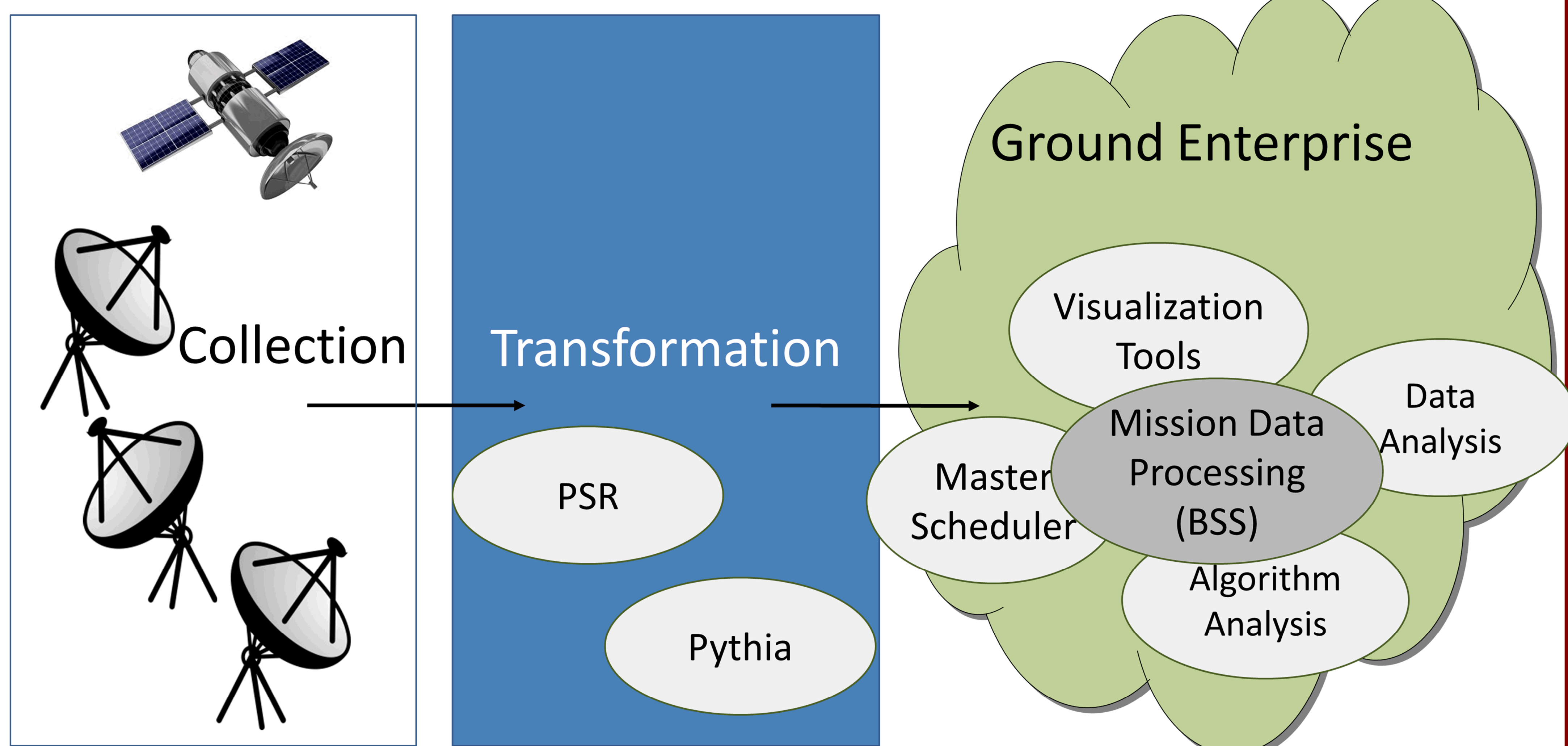
The Caravel project started as a successful concept demonstrator which transitioned to an operational system. Unlike other SNL ground systems, Caravel delivers ground system components into the sponsor's ground enterprise. Caravel was named after a 15<sup>th</sup> century small, highly maneuverable sailing ship. It represents the rapid prototyping and exploitation capabilities this project has accomplished over the years. The Caravel components are deployed to a heterogeneous environment which must comply with strict sponsor requirements. The components use a blend of languages (C++, Java, Python, etc), middleware (RabbitMQ, etc), and operating systems (RedHat, Mac OS, etc). As necessary, components may also require specialized hardware and integration. The Caravel team explores new technologies and techniques to address emerging sponsor requests to augment the system.

### Caravel Capabilities:

- Processing Segment R (PSR)
  - Data collection and event detection processing
- Pythia
  - Specialized transformation processing
- Base Station Segment (BSS)
  - Data product creation and mission data processing
- BSS Tools
  - Visualization tools
  - Master Antenna Scheduler

### Future research areas:

- Advanced mission processing algorithms
- Leverage NGS capabilities in new ways
- Data Analysis & Analytics
- Adapt to changing security requirements
- Design for flexible system integration and component reuse
- Perform ad-hoc system testing
- Support sponsor experimentation and prototyping



We provide ground processing components and research new ideas to address emerging sponsor needs.