

Crew Health and Performance Integrated Data Architecture Project Update

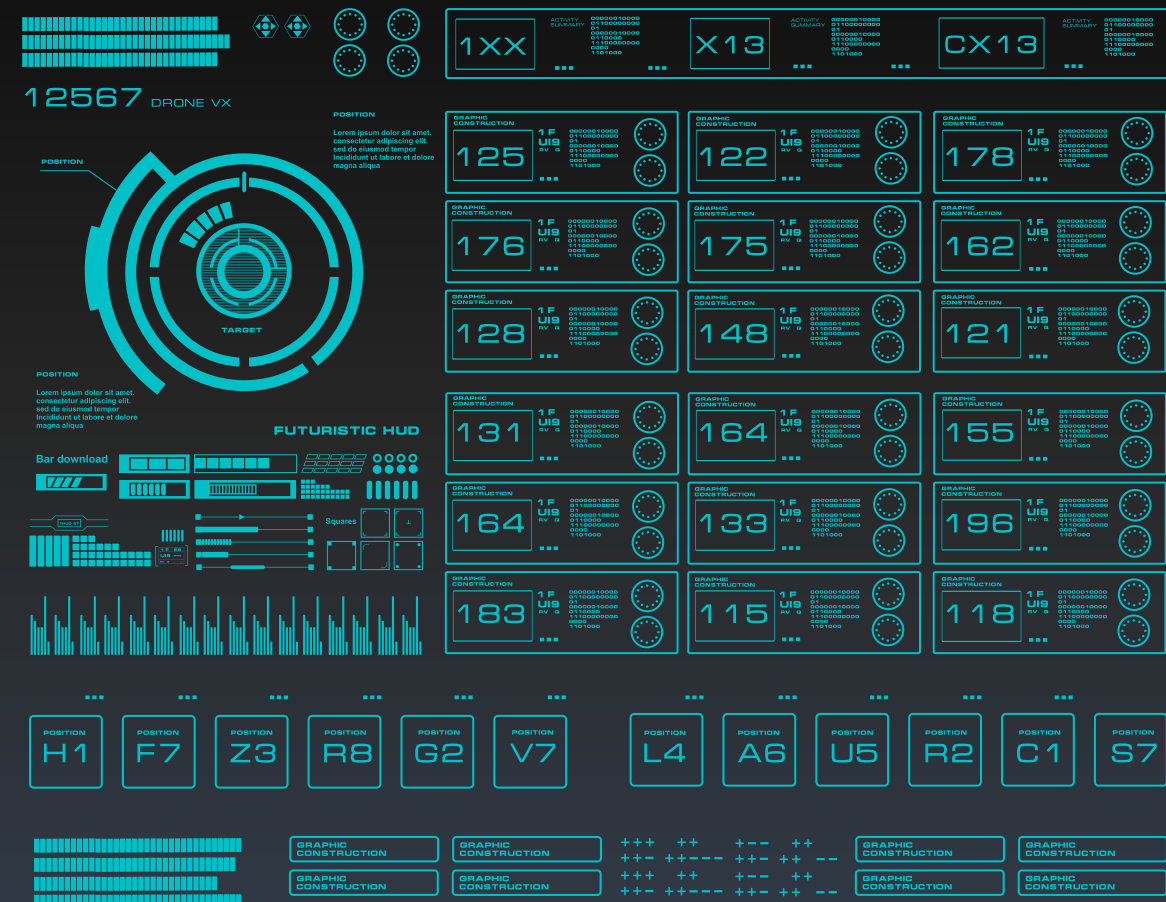
2024 Human Research Program Investigators' Workshop

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Mission Data: Many Forms. Disparate Sources.

- Event Data
- Time Series Data
- Analysis Results
- Reports
- Descriptive and Predictive Analytics
- Photo, Video, and Audio Files
- Consumables / Stock
- Environmental
- Proprietary Sensor Data Packages
- ... many other categories of data ...

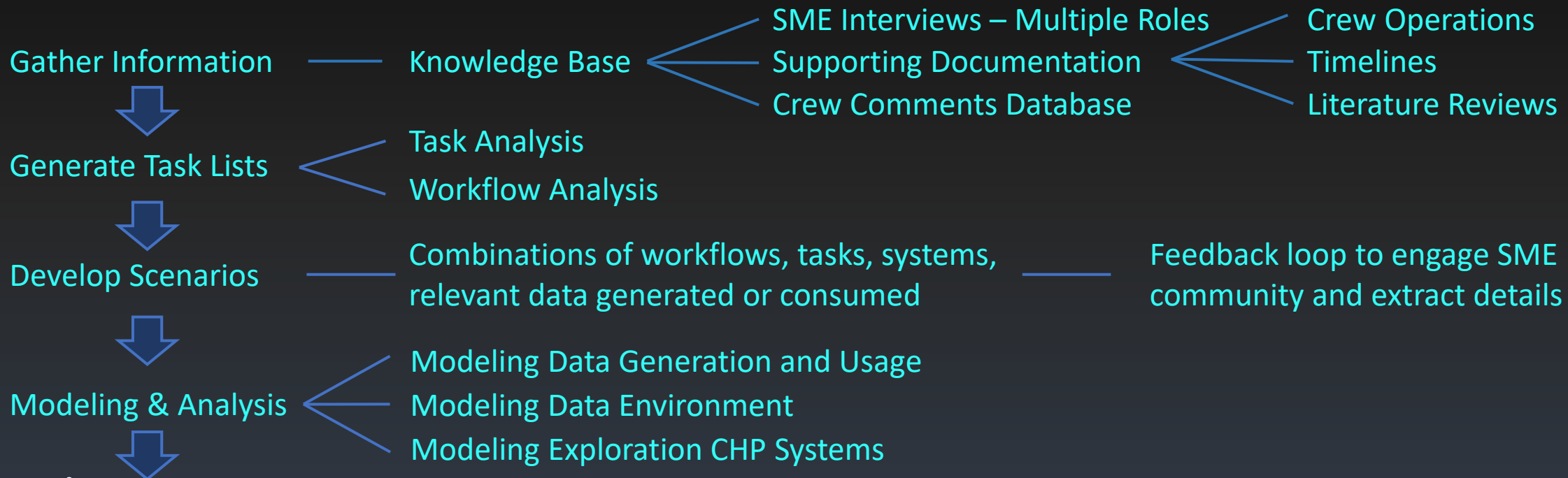


Abstract Data Display Representation

Deriving Exploration Mission CHP Data Needs

Challenge

Derive future mission CHP data needs from existing knowledge to devise an exploration data architecture



Goal

Extract CHP Data and Data Architecture Needs



Exploration Mission Data Services Stack

Exploration Mission	<ul style="list-style-type: none">• New Mission Profiles• Further from Earth• Longer Comms Delay• Difficult Resupply• Different Constraints• Harder to Evacuate
Integrated Mission Operations System	Supports Exploration Mission by enabling Independent Operations
CHP Domains	Provide IMOS capabilities through updated workflows & tools
CHP Domain Support Tools, Workflows, and Technologies	Uses Mission Data to provide capabilities that CHP domains need to support layers above
Computation, Data, and Data Products	The Raw and Processed Data the Support Tools need to function
CHP IDA	A Platform to provide and meet the needs of these Data Products

CHP-IDA's Role in Exploration Missions

CHP-IDA Purpose and Role

- To provide a **platform** for CHP application developers to **gain access to the data they need** to meet their domains' specific mission needs.
- To provide for the **common needs** of CHP mission data, as part of the larger space mission architecture, *both in-flight and on the ground.*

Data Correlation	Data Privacy	Data Processing
Data Protection	Data Security	System Interfacing
Data Storage	Synchronization	Data Connectivity
Resource Management	Platform Apps	User Interfacing
Mission Ops Systems Integration	Common App Data Interfaces	Data Store Integration
Search and Location	Technology Integration	Extensible Interfaces
Audit Trail	Alerts and Notifications	Performant Processing

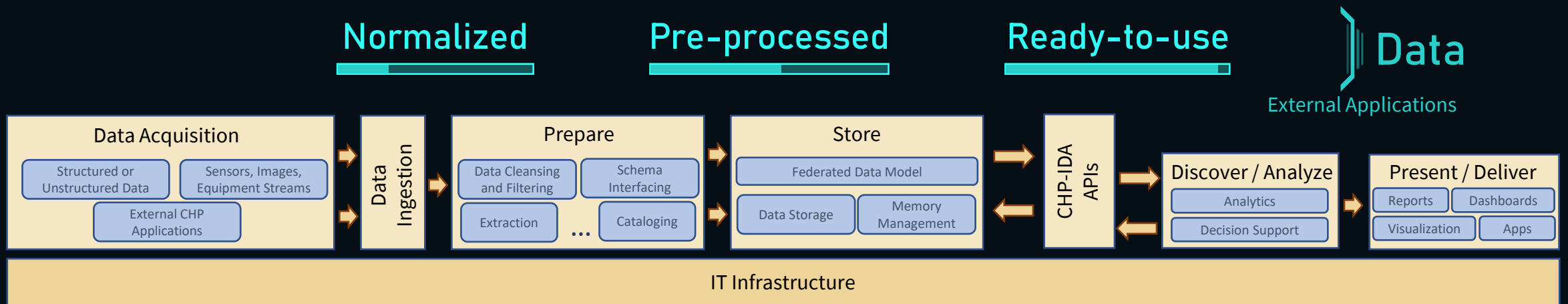
Planned CHP-IDA Mission Data Architecture Capabilities

CHP-IDA Data Pipeline



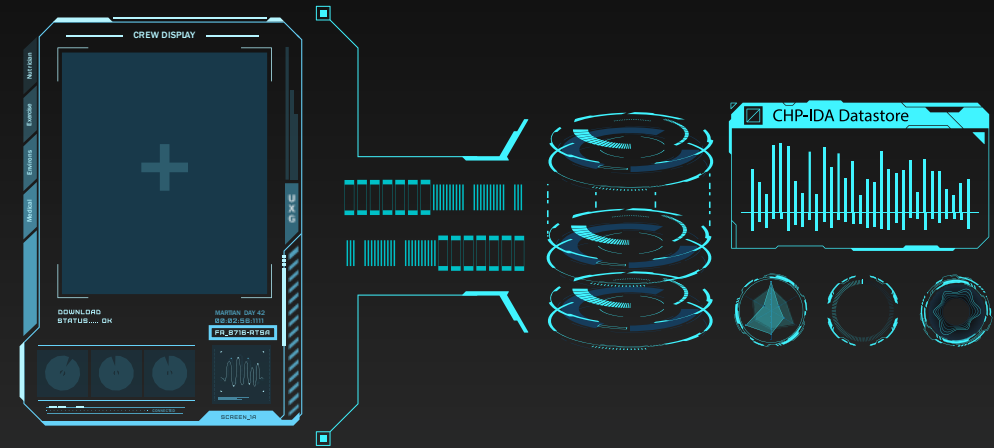
All need data at their core in order to operate

But not just any data....



The Path to CHP-IDA

- CHP-IDA Path-to-Flight Project
- Low initial cost to evaluate the concepts
- Discover and prove out concepts on the ground
- Establish a foundation for a flight mission using CHP-IDA
- Provide IDA technology to the CHP community

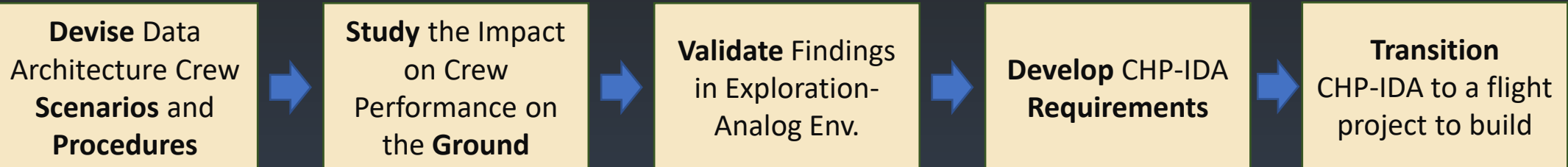


Data Displays and Interfaces

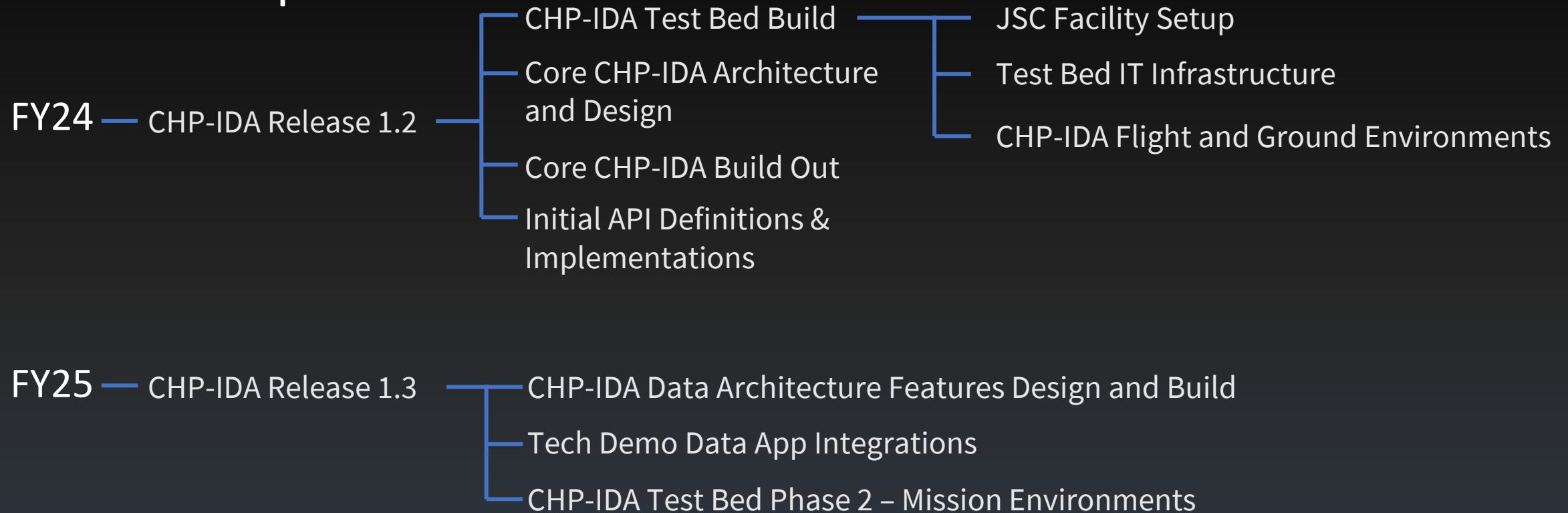
Data Storage and Processing

Outline of the Approach

Building upon existing work



Next Steps



Thank You!



CHP-IDA wants *your* help!

- Scenarios
- Use Cases
- Data Uses
- Alpha and Beta Testers
- API Usability Feedback
- Integrations

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