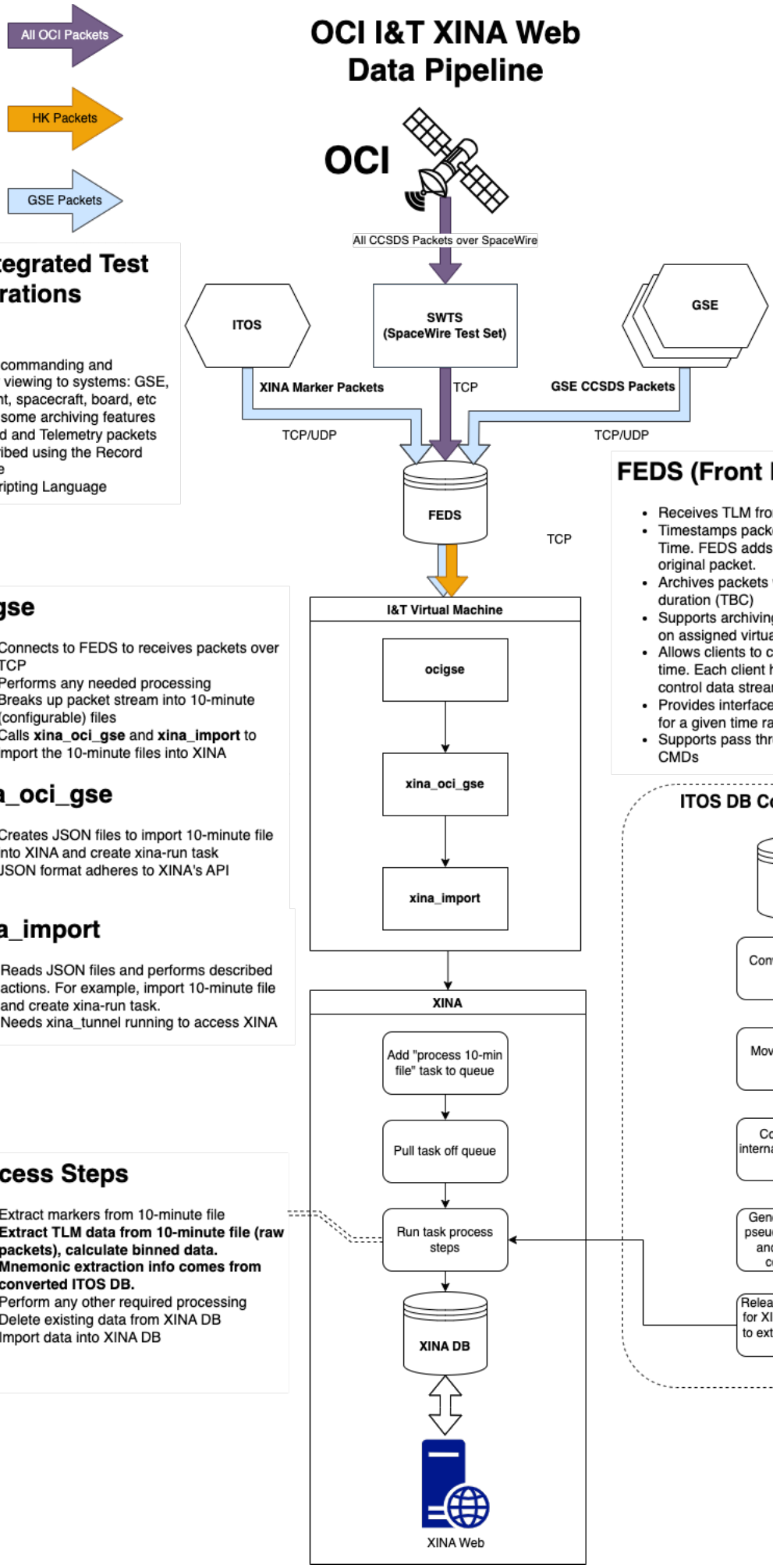
Data Flow In Depth

This diagram shows and describes the lower level details of the XINA data pipeline.

OCI I&T XINA Web Data Pipeline



ITOS (Integrated Test and Operations System)

- Provides commanding and telemetry viewing to systems: GSE, instrument, spacecraft, board, etc
- Provides some archiving features
- Command and Telemetry packets are described using the Record Language
- STOL Scripting Language

FEDS (Front End Data System)

- Receives TLM from all data sources
- Timestamps packets with the Ground Receipt Time. FEDS adds its own headers around the original packet.
- Archives packets with configurable file size or duration (TBC)
- Supports archiving data into different files based on assigned virtual channel
- Allows clients to connect to receive packets in real-time. Each client has a configurable filter file to control data streams the client receives.
- Provides interface to perform playbacks of packets for a given time range
- Supports pass through of CMDs to archive all CMDs

ocigse

- Connects to FEDS to receives packets over TCP
- Performs any needed processing
- Breaks up packet stream into 10-minute (configurable) files
- Calls **xina_oci_gse** and **xina_import** to import the 10-minute files into XINA

xina_oci_gse

- Creates JSON files to import 10-minute file into XINA and create xina-run task
- JSON format adheres to XINA's API

xina_import

- Reads JSON files and performs described actions. For example, import 10-minute file and create xina-run task.
- Needs xina_tunnel running to access XINA

Process Steps

1. Extract markers from 10-minute file
2. **Extract TLM data from 10-minute file (raw packets), calculate binned data. Mnemonic extraction info comes from converted ITOS DB.**
3. Perform any other required processing
4. Delete existing data from XINA DB
5. Import data into XINA DB

Revision #2
Created 19 February 2024 18:30:43 by Bradley Tse
Updated 19 February 2024 20:35:33 by Bradley Tse