Case Study: NASA Launch and Control Systems

Return to Applications

Title	NASA Launch and Control Systems
Application Area	Aerospace and Defense
Date Created	2019 06 05
Stakeholder	Orion Spacecraft
Stakeholder POC	
DDS Platform	Vendor: Real-Time Innovations (RTI)
Source	RTI: Product Overview
Keywords	SCADA. sensors, data storage, persistence

Problem Description

When a missile is launched at NASA's Kennedy Space Center (KSC), there are over 400,000 control points that need to be monitored in real-time to assure that the launch system is working properly and is going as planned making this one of the largest Supervisory Control and Data Acquisition (SCADA) systems in the world.

Architecture Overview

☐ [chip]Need to provide an OV1

Conclusion

Data Distribution Service (DDS) was successfully deployed and used during the first launch of the Orion spacecraft. DDS was able to intelligently distributed updates from thousands of sensors in real-

time without a huge impact the network.

DDS was also configure with QoS parameters (DURABILITY QoS Parameter and DURABILITY_SERVICE QoS Parameter) to store all the data for later analysis and help filter (i.e., downsampling) the data for viewing on the HMI Stations in the flight control room.

Source: RTI: Product Overview