USE CASE:
Aerospace Industry

BACKGROUND

RTS is present in the aerospace industry. Aerospace industry has strong ties to national defense. The nature of the research is secret, and suppliers are often under NDAs (Non-Disclosure Agreements). For this reason, this Use Case does not divulge the identity of the company in question.

Activities that require real-time coordination to succeed are great applications for intercom. Keypanels are pre-programmed with all the individuals or groups with which each user communicates. By pressing a key, users establish an instantaneous bi-directional audio path. The matrix is the audio router that makes this possible. In aerospace, activities like testing new rocket engines or supervising an actual launch require coordination of hundreds of people. In the case of a launch, they may be in different geographical locations, so the ability to tie them together into an integrated network is critical to success.

In this particular Use Case, at least four locations communicate in real time during a launch:

- The launch site itself
- The company headquarters
- NASA's Johnson Control Center
- The satellite manufacturer

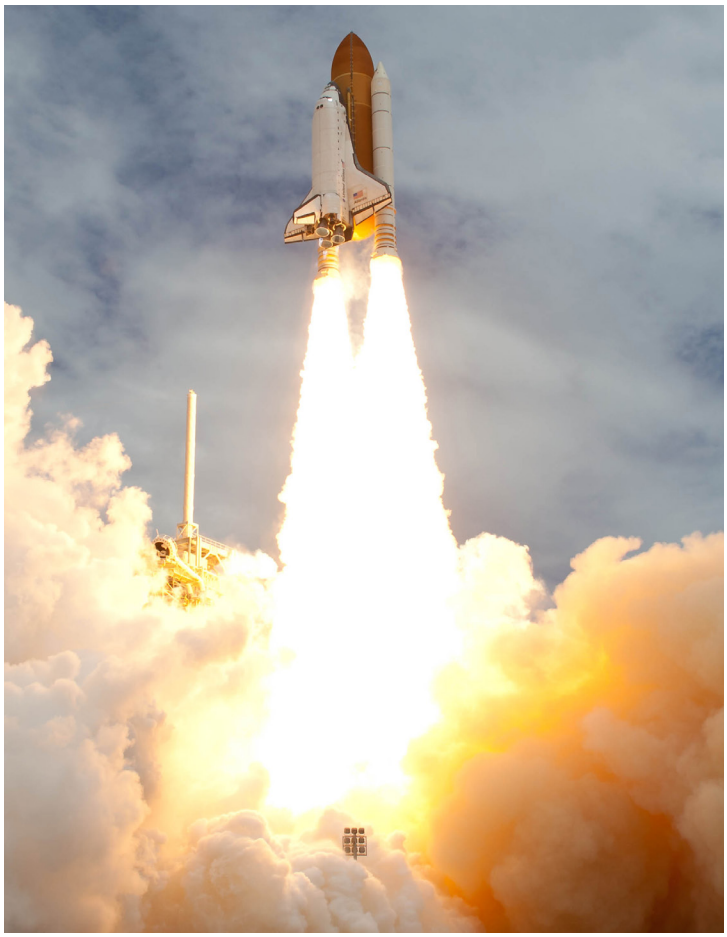

Figure 1. Space Shuttle, now decommissioned, was a symbol of space exploration

A LAUNCH

At the launch sites, there are multiple operators that monitor subsystems of the rocket and supporting equipment. Computers, of course, monitor processes that may be too quick for a human to perceive. At a certain point in the countdown, computers trigger the events that have to happen in a certain sequence for the systems of the rocket to work correctly. At the company headquarters location, additional operators perform similar tasks. NASA's Johnson Control Center is also tied into the communications system – they are the "flight control" of space and nobody is allowed to launch anything without involving them. Finally, the manufacturer of the payload – typically a satellite that needs to be delivered into orbit – monitors the health of the satellite itself (temperature, vibrations, electrical voltages and so on).

NETWORK DIAGRAM

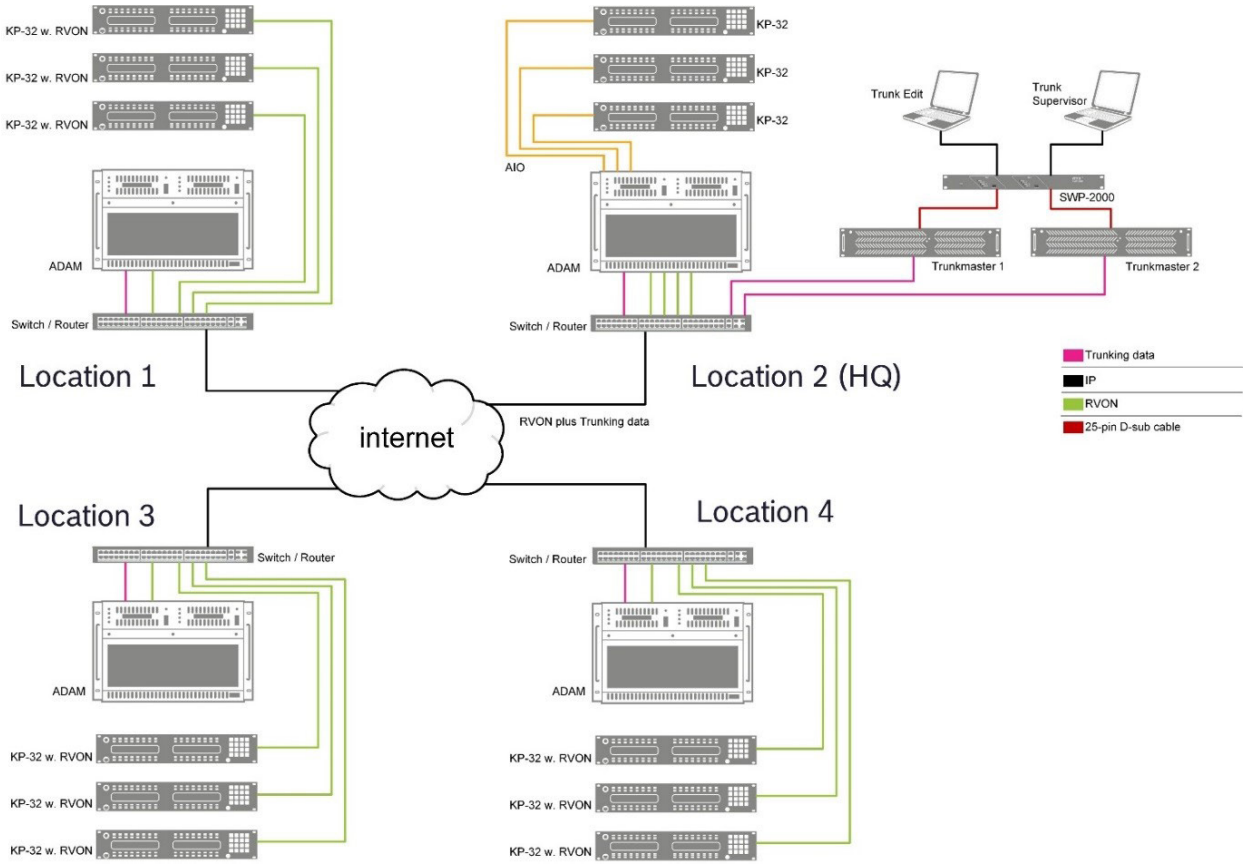

Figure 2. Four company locations are tied together with RVON technology

Figure 2 shows the four company locations. The two external locations are not shown (NASA and the satellite maker). However, they are also tied in with RVON. Each location has multiple keypanels. With the exception of one location, the company headquarters, keypanels with RVON capability are used. In the headquarters location, analog AIO is used. Some migration to OMNEO is occurring but this is not shown in the graphic. The OMNEO technology makes it easy to record multi-track audio directly to a server, including time stamping to allow the sequence of events to be re-created if necessary. An AZ-Edit function called enhanced tallies is used to indicate at the glance of an eye which facility is talking on a Partyline connection (not shown). Trunking is used for routing between matrices. The primary Trunkmaster is backed up by a redundant unit, and the switchover panel (SWP-2000) switches from primary to secondary if the primary unit goes down for any reason.

Note RVON is available as an optional and free firmware download on all KP-Series keypanels except the KP-3016A which is an analog-only version. In this example, KP-32 panels are shown. They require a plug-in card to use RVON.