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NASA uses massive image repository to impact real-time mission safety

NASA, the National Aeronautics and Space Administration, launched in the late 1950s with the mission to pioneer the future in space exploration, scientific discovery, and aeronautics research. While NASA is based in Washington, D.C., its daily activities take place in laboratories, air fields, wind tunnels, control rooms, and other testing sites around the U.S. The agency's work in aerospace exploration and defense necessitates that it handle massive amounts of vital information and images. NASA's needs for organizing and rapid retrieval are almost as vast as space itself.

Mission-critical images and access
One of NASA's core challenges is providing secure access to mission-critical images and videos of pre-flight, in-flight, and post-flight activities. In order to have these graphics at the moment of need, NASA had to have a centralized repository for this huge archive, as well as the ability to quickly and easily search it during real-time missions.

It's no small feat to organize and store more than 5 million photos, 10,000 videos, 7,000 motion-picture films, and thousands of high-definition images. Add the need to be able to keep them secure, but also make them accessible within seconds during high-pressure events to ensure crew and mission safety, and you begin to understand NASA's extraordinarily demanding environment.

What happens in Mission Control
During each mission, approximately 800 images are taken. These images, produced during every phase of a mission, must be quickly analyzed to uncover potential or real vulnerabilities in the launch vehicle. Engineers must immediately act on the knowledge gained from this analysis, since it enables each mission's decisions for an "all systems go," a delayed launch, or vital in-flight adjustments. The images produced are stored for ongoing and future diagnostics and design, becoming critical components of the success of each new mission and of the agency itself. So this repository grows quickly.

Case Details

What NASA Does
- Manages millons of vital images that must be securely stored and instantly accessible
- Uses images and video to improve mission safety, pre-flight, inflight, and post-flight
- With 800 images (approx.) added per mission, repository grows quickly

Results with InMagic Presto
- Seamless access to mission-critical video and imagery NASA-wide
- "Google-like" search has enabled quicker parts analysis and improved diagnostics
- Easily and efficiently manages growing repository of imagery

"Inmagic's software makes it easier for NASA to retrieve images and share them among the various facilities and departments,"

- Jeff Wolfe, Photo Planner, IMCS, Photo & Media Services at Kennedy Space Center

NASA uses Inmagic Presto as its image storage and retrieval solution for this vital work. When NASA implemented Presto, it significantly broadened employees' access to its video and imaging repository. Presto is used within NASA to organize and to provide seamless agency-wide access to these mission-critical video and imaging assets, which are used by an audience of hundreds of engineers to increase mission safety, review design decisions, and monitor launch results.
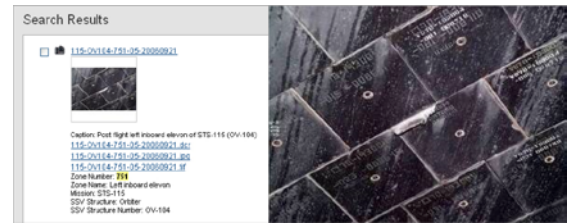
"Inmagic's software makes it easier for NASA to retrieve images and share them among the various facilities and departments," said Jeff Wolfe, Photo Planner, IMCS, Photo & Media Services at Kennedy Space Center.

Image access impacts safety

As part of its deep commitment to crew safety, NASA constantly takes steps to improve the quality of retrieving and sharing pre-, post-, and in-flight images. Wanting to avoid future mission anomalies such as the tragic space shuttle Columbia incident, NASA went on a quest for a solution to help manage critical image-based data. The project was led by a dedicated internal team that re-engineered the business processes used to support the shuttle mission. The team's successful effort was bolstered by close cooperation between IT and Inmagic's Services team.

NASA's team selected Inmagic Presto for several of its strengths, including Presto's ability to support a great depth and variety of documents types, its real-time search of image archives, and its seamless integration with 3-D image viewers. Another benefit was that Presto provided one intuitive administration and user interface. This "Google-like" search enabled NASA engineers to more quickly analyze the condition of space shuttle parts and improved their diagnostics.

One of the benefits of the Presto implementation is NASA's ability to make images accessible across various departments and divisions. For example, pre- and post-flight images captured in Florida at the Kennedy Space Center and the images captured at Johnson Space Center in Houston, are available to the staff at the Marshall Space Flight Center in Alabama for analysis. As a result, NASA has better data sooner, and its engineers are able to make real-time decisions that impact the launch vehicle, mission, and crew safety.

This cross-functional visibility is achieved by providing a single source for all relevant images. With NASA's focus on ensuring that its staff members across the country can all rapidly call up these images, the agency is continuously improving the crew and shuttle safety for all future missions. The success of NASA's manned space program is driven by the safe return of its crew and by the contributions that each mission makes to the advancement of science. NASA relies upon Presto to ensure the secure, reliable, and rapid availability of the image-based data that is necessary to make mission-critical decisions across functional groups.

Space to expand

Reliability, efficiency, and innovation are some of the benchmarks that NASA uses to measure success. Integration, security, and access are some of the principles that Lucidea builds into its products, including Inmagic Presto. So, as our galaxy continues to expand, so can this partnership.

Looking toward the future, NASA continues to broaden its drive for improving mission safety by increasing the amount of images it will capture. The potential for managing and maintaining the imagery associated this strategy are infinite. With Presto as the backbone of its image repository, NASA is successfully executing its mission safety program.

About Lucidea

Lucidea is the premier knowledge management software company, helping people navigate the ever expanding universe of information, turning it into actionable knowledge. We achieve this by providing tools that accelerate access to knowledge resources, while simplifying their management.

To learn more about Inmagic Presto and how it can help solve your knowledge resource management challenges, visit www.inmagic.com.