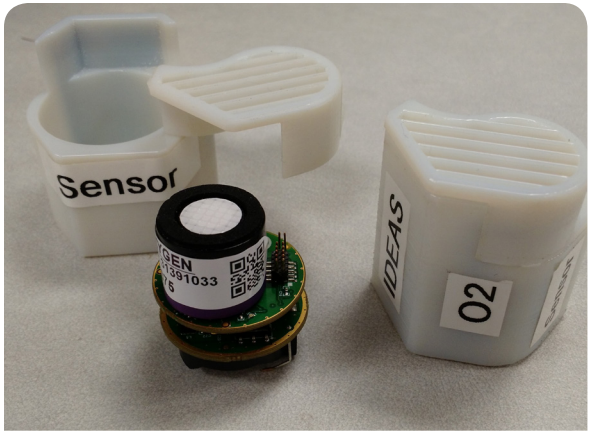

Components of IDEAS

IDEAS is a full featured hardware and software system built to enhance the capabilities of the NASA work force on the ground and in space. Components include:

- **IDEAS Software** - Software developed on Android that includes: Communication (Video & Audio Calls), On-Board & Remote Cameras, Work Instructions, Sensor Data
- **IDEAS Accessories** - Accessory suite that provides environmental awareness features that include: Remote RGB and Thermal Camera, Remote O2, CO, NH3, and temperature sensors.
- **IDEAS Smart Glasses** - Custom designed smart glass prototype being designed with flexibility for multiple NASA ground operation scenarios.
- **COTS Smart Glasses** - IDEAS Software and Accessories are compatible with Commercial Off-The-Shelf (COTS) smart glasses in order to take advantage of the rapid advancements being made in this industry.

What is IDEAS?

What is it?
Head-mounted display system for users on Earth and in Space. IDEAS provides visual communication and augmented reality information to its user.

What is it for?
Improving situational awareness, safety and efficiency of the user.

Who is it?
A team of early career professionals with NASA have partnered with Abacus Technology, Florida Institute of Technology's Human-Centered Design Institute, and Purple Rock Scissors.

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SP–2016–11–396–KSC

National Aeronautics and Space Administration

Integrated Display and Environmental Awareness System

Space Technology Mission Directorate

What if...

All work procedures were available on demand?

You could document work procedures with text and images easily?

You could record each move you make and that recording could be played back later for training or analysis?

You have a tele-presence that streams what you are seeing - as you see it - to colleagues anywhere in the world?

For each of your tasks, the progress performed by others is on hand immediately?

All emergency sensors and system health data are instantly available, so if an emergency occurs, you are notified immediately and provided egress instructions?

And what if all of this can be wirelessly transmitted across the globe or stored locally?

Now Imagine...

All of this displayed and usable right from your safety goggles using an embedded, lightweight wearable computer.

The technology being developed for the Integrated Display and Environmental Awareness System (IDEAS) project is a wearable computer system with an optical heads-up display (HUD) providing various means of communication and data manipulation to the user. The wearable computer, in the form of smart glasses, would allow personnel to view and modify critical information on a transparent, interactive display. This is presented in their unobstructed field of view, without taking their eyes or hands away from their critical work.

The product is being designed in a modular manner so that the user can adjust the capabilities of the device depending on need.

What you need
Where you need it
When you need it

Initially the technology will be proven-out for launch site ground operations, but in the future it can be transitioned for use in many other areas ranging from an airplane cockpit to laboratory research on the International Space Station, to even an exploration mission on the Martian surface.

The IDEAS project is being managed at Kennedy Space Center in Florida, as part of NASA's Space Technology Mission Directorate (STMD).

This KSC team was one of four that were selected from across the Agency as part of STMD's Early Career Initiative (ECI) pilot program. The program encourages creativity and innovation among early-career NASA technologists by engaging them in hands-on technology development opportunities needed for future missions.

Emerging wearable technologies are showing promise across many industries, and now NASA is investing in this exciting technology, applying it to the agency's unique mission.