

AF CE lab delivers needed capabilities for Warfighters

By KJ Knox

AFCEC/CXAR

Did you know the Air Force Civil Engineer Center operates the only research laboratory just for Air Force Civil Engineering?

The lab, located at Tyndall Air Force Base, Florida, is part of the Requirements, Research & Development, and Acquisition Division, and works to deliver needed civil engineer capabilities to the warfighter.

AFCEC has the authority to manage CE functional acquisitions outside of the Defense Department's Joint Capabilities Integration and Development System (JCIDS), ensuring it can get new capabilities to the field fast and where they are most needed.



From top, CX lab member Dr. Robert Diltz, gives a demonstration to Col. Dave Norton, center, and Col. Brad Johnson. (U.S. Air Force photo by David Ford).

But how does AFCEC ensure the capabilities they deliver meet the needs of our warfighters? First, the Capability Requirements Branch derives the capability requirement. A requirement describes the ability to accomplish a task or mission, under a specific set of conditions or constraints and to a specified minimum standard. A valid requirement must be based on assigned roles, missions, functions and operations of civil engineers for today or in the future. The branch compares the task or mission requirement with its ability to execute the requirement. If there is no existing capability, or a lack of training, equipment or material, then a capability gap is identified.

Requirement managers in the branch engage with field users and subject matter experts, and research training documents, wargames, operational plans, concepts of operation, and many other information sources to determine what is needed to fill the capability gap. Sometimes it's a change in manpower, more of something, or training; sometimes it requires some new material or equipment. The solution is documented in a report. If the solution is new material or equipment, the requirements manager documents the requirements in the AFCEC Functional Requirements Document, or FRD. The FRD is modeled after the JCIDS Capability Development Document, and answers key questions such as:

- Why is a specific capability needed (what capability gaps does the new capability address)?
- How will it be used (Concept of Operations)?

- What does it need to do (metrics, standards, environmental conditions, etc.)?
- What impact will it have on DOTMLPF-P (Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities, and Policies)?
- How much will it cost (life cycle costs, not just procurement costs)?

The requirements manager follows the development of the material or equipment as the civil engineer laboratory develops it. The branch also works with the CE laboratory to develop a procurement strategy or interact with outside agencies, such as life cycle management and sustainment centers, to ensure life cycle support for warfighters.

Recent examples of what has gone to the warfighter include the Water and Fuel Expedient Repair System (WaFERS), the Expedient Small Asset Protection (ESAP) System, the Rapid Airfield Damage Assessment System (RADAS), and coming soon – the Large EOD Robot!

Editor's Note: To learn more about the AFCEC FRD, or become a capability requirements manager, email the author at kenneth.knox.6@us.af.mil.