Crosscutting by design to maximize operational impact

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Need for crosscutting solutions

- The United States Department of Homeland Security (DHS) is comprised of a broad range of components

  - Diverse needs and priorities

- The Science and Technology Directorate (S&T) strives to address capability gaps across a range of components

  - Focus on shared interests and responsibilities

- Need to meet crosscutting as well as component-specific needs

Strategic and transparent engagement

- Office of Innovation and Collaboration
    - Conduit to broad range of stakeholders
        - Range of DHS components
        - Other government agencies
        - Industry
        - Foreign partners
        - Academia
    - Develop in-depth crosscutting understanding of needs
    - Develop shared funding opportunities

Solution development framework

Capture User Needs
End user engagement utilizing cognitive walkthroughs, focus groups, attending training sessions, reviewing existing training materials, and conducting stakeholder interviews

Generate Training Requirements
Identification of operational needs and capability gaps with consensus and high priority requirements with components

Continual Stakeholder Engagement
Iterative design where requirements, wire frames, prototypes, scripts, etc. are validated with stakeholders. Continual input from stakeholders assures that the final product will meet all needs

Transition
Components take possession of solution and begin operational use of the solution

Post Transition Performance Assessment (PTPA)
Each solution engages in an evaluation, whether from user interaction and acceptance studies or training effectiveness evaluations

Capture User Needs

- United States Border Patrol (USBP) required tracking/signcutting training to track and apprehend aliens and smugglers

- Federal Law Enforcement Training Centers (FLETC) required tracking/signcutting training to support missions ranging from search and rescue to crime scene analysis
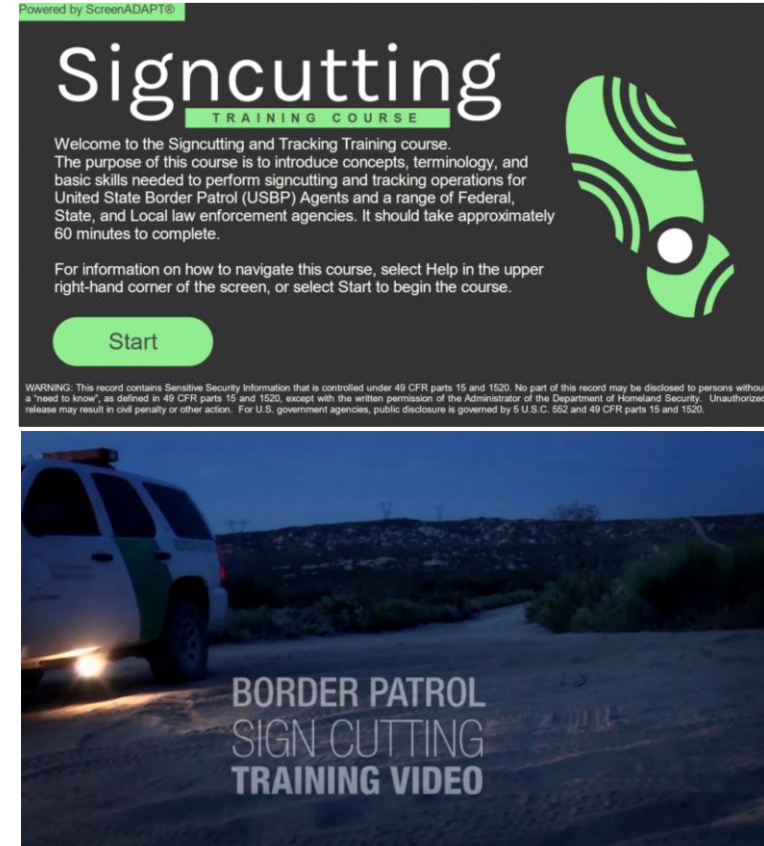
Capture User Needs

- Reviewed training materials and observed training from both components

- Conducted operational observations at 3 USBP sectors

- Conducted knowledge elicitation interviews with signcutting experts

Generate Solution Requirements

- Defined learning objectives

- Defined content platforms

  - Web enabled for basic concepts

  - 3D video for advanced concepts

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Signcutting
TRAINING COURSE

Welcome to the Signcutting and Tracking Training course.
The purpose of this course is to introduce concepts, terminology, and basic skills needed to perform signcutting and tracking operations for United State Border Patrol (USBP) Agents and a range of Federal, State, and Local law enforcement agencies. It should take approximately 60 minutes to complete.

For information on how to navigate this course, select Help in the upper right-hand corner of the screen, or select Start to begin the course.

Start

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BORDER PATROL
SIGN CUTTING
TRAINING VIDEO

Continual stakeholder engagement

- All stakeholders encouraged to participate in bi-weekly meetings
    - Establish common training needs across components
    - Review iterative design project milestones
        - Gap analysis
        - Learning objectives
        - Storyboards
        - Scripts
        - Alpha version

Transition

- Final solution of one funded project will benefit

  - All newly hired USBP Agents

  - Federal, State, Local, and Tribal law enforcement officers

- No last minute changes requested by any stakeholders

  - Feedback of all stakeholders already integrated

Post Transition Performance Assessment

- Pilot study used to evaluate experimental feasibility (i.e., time, costs, training impact) before conducting full-scale study

  - Small group study

  - Do not expect statistically significant results

- USBP Agent Trainees (BPATs) demonstrated 63% improvement in applications, analysis, and synthesis

- Based on pilot study results, full scale PTPA will be conducted

Conclusions

- Involvement from stakeholders and end users from multiple components must begin at the start of projects to maximize benefits of the process.

- Maintaining stakeholder and end user engagement is a challenge that requires constant attention and patience.

- Iterative design with stakeholder and end user involvement reduces risks/surprises/unknowns and reduces last minute change requests as design is finalized and increases the probability that the design will be acceptable to the customer and/or end user and successfully transition to operations.

- Balancing the crosscutting need with component-specific needs often requires obtaining consensus across components to prioritize requirements.

- Post transition performance assessments results in wider solution adoption across multiple components, maximizing the impact of the investment.