



# TransLumen Technologies, LLC

## Capability Statement for FAA

### COMPANY OVERVIEW

TransLumen is a technology company that provides advanced visualization tools for better situational awareness to improve actionable decisions for "Big Data", testing/improving observational capabilities through simulation and to develop training through gamification. Government and large company integrators engage TransLumen for its unique human factors, UX expertise and advanced methodologies that have a rapid commercialization path.

### CORE COMPETENCIES

#### Developer of next generation alarms and alerts solutions for "Data Visualization" applied to today's needs

TransLumen uses its proprietary and patented designs and techniques to advance computer graphical user interfaces. This is accomplished by **aggregation, navigation and display** of information to provide more actionable interfaces improving the user's ability to recognize real-time anomalies. TransLumen can aggregate multivariate factors then navigate and display information in a highly usable form (through TransLumen's patented **Subthreshold Extreme Gradual Change (STEGC)** visual processing) and creating a persistent data drill-down in real-time with its **v-INDICATOR™**. TransLumen's technology and approaches include such benefits as:

- ⊕ Reduces screen clutter and visual noise
- ⊕ Advances prioritization through filtering
- ⊕ Provides visual predictive capability
- ⊕ Scalable and mobile
- ⊕ Identifies worst case anomalies
- ⊕ Monitor's over time without intrusiveness unless thresholds are crossed
- ⊕ Filters and identifies correct actionable tasks at the right time even under stress and critical situations
- ⊕ Balancing the operator's workload by displaying simplified aggregated multivariate information

#### Observational Training for Operations, Security and Safety

TransLumen applies its Subthreshold Extreme Gradual Change (STEGC) algorithms to create advanced observational skills training. This enables operators to recognize subtle cues, hazards and physical threats in complex environments. It also enhances operators perceptual skills at command centers, field personnel in emergency response, and security teams involved with physical security around assets.

- ⊕ Helps trainees recognize subtle cues in complex environments
- ⊕ Develops testing to identify individual observational abilities or deficiencies using the patented STEGC
- ⊕ Reduces the time needed to differentiate between threat or non-threat conditions and response time;

#### Mobile Distributed Gamification for Training and App Development

TransLumen creates distributed training tools that augment the training environment. The combination of video, instructional text, augmented reality, VR and STEGC imagery interact, enhancing the learning process. Gamification developed with TransLumen's expertise leverages classroom materials and better prepares the user for high fidelity simulators and operational environments. In addition, low fidelity interactive tools are easy to use, easy to repeat and easy to learn. Distributed training through gamification can be developed rapidly, is more affordable to maintain and operate, and is highly configurable and adaptable. The apps can be updated quickly as feedback indicates a need for additional problem solving.

- ⊕ Increases training hours to promote off-hours play/study during and between scheduled classes
- ⊕ Provides refresher classes for those already in place as Controllers
- ⊕ Offers the user a new experience through gamification that is motivating, engaging, and stimulating, enhancing learning and providing immediate feedback on performance.
- ⊕ Reduces training costs therefore providing a higher ROI

## TRANSLUMEN DIFFERENTIATORS

- ⊕ Possesses proprietary and patented algorithms, designs and techniques to advance graphical user interfaces
- ⊕ Pioneers in visualization technologies and mobile app development
- ⊕ TransLumen's management team has over 20 years of experience each, in such key disciplines as technical innovation, graphic software programming including 3D games, photography, cartographic mapping, database construction, project management and finance
- ⊕ TransLumen's technology has been tested by R&D organizations with successful results

## APPLICATIONS TO FAA

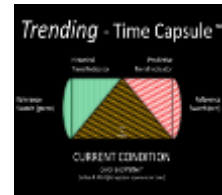
### OBSERVATION TRAINING AND GAMIFICATION

- ⊕ UAS and ATC training through gamification with observational STEGC
- ⊕ Providing advance visualization for improving and testing for user capabilities for fatigue and other human in the loop cognitive competencies
- ⊕ Observational training for humans to see areas on runways, maritime disaster situations and security



### ALARMS / ALERTS & INTERFACE DESIGN

- ⊕ Advanced visual indicators to monitor flight tracks and clustering of aircraft
- ⊕ Multivariate data and dynamic heat maps for ATM and UAS operators
- ⊕ Simplified dynamic communication & reporting between internal/external locations
- ⊕ Optimizing more information to data-blocks, while improving screen design and scalability providing for maximizing screen real estate and allowing for better situational awareness
- ⊕ Allows for more user flexibility in screen and visual indicator design for UAS systems along with improved interoperability between government and private users
- ⊕ Presenting advanced weather system (as well as micro systems) information against multivariable and aircraft predictive aircraft conflict resolutions



### COMMUNICATION TOOLS

TransLumen creates dynamic reporting before, during and after emergency incidences that will access information from outside databases published via filtering to internal operations and external agencies, airports, OEMC, Security agencies International and other targeted private and public entities.

### USER EXPERIENCE CONSULTING

TransLumen's applies its user experience and human factors expertise to advance interface design decisions tailored for employee diversified needs, screen scale, device attributes, mobility, and connectivity.

## PAST PERFORMANCE

Government	Commercial
Office of Naval Research (ONR)	Exelon and ComEd (Utilities)
Naval Research Laboratories (NRL)	Lockheed
Homeland Security	Boeing
Office of Interior	Motorola
NASA	Gas Technology Institute
Office of Naval Research grant managed through the Illinois Technology Development Alliance	QinetiQ (British Research Company with Ministry of Defense)
Others....	

## Corporate Data

Business size: **Certified Service-Disabled Veteran-Owned Small Business (SDVOSB)** Duns # 120807719 CAGE # 3VNT3  
 The company was incorporated in February, 2000. TransLumen has been awarded US patents #6,433,839 and #6,580,466, and a Canadian Patent #CA 2,404,29