

# International Civil Aviation Organization

2014 LOCI Symposium

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# ICAO Dealing with Unexpected Events (DUE) Working Group

## Human Cognitive Performance

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# DUE Group Members

- Dr. Michelle Millar of ICAO (Chair)
- Dr. Kathy Abbott of the U.S. FAA
- Dr. Claire Pélegrin of Airbus Corp.
- Capt. Patrick Magisson of Air France
- Capt. Dave McKenney of ALPA and UAL
- Dr. Clint Balog of Embry-Riddle Aero. Univ.



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# DUE Group Focus

To describe the physiological, psychological (cognitive), and performance impacts on the flight crew following Unexpected Threatening Events (UTEs) inflight



# Definitions

***Unexpected Threatening Event:*** Any in-flight event that the flight crew could not anticipate in the course of normal flight operations and that is perceived as having a high negative impact on the safety of the current flight.



# Definitions

***Startle Response:*** The initial short-term, involuntary physiological and cognitive reactions that commence the normal human stress response.



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# Definitions

***Stress Response:*** A response to an unexpected event that includes physiological, psychological, and cognitive effects that may range from positive to negative and may enhance or degrade performance.



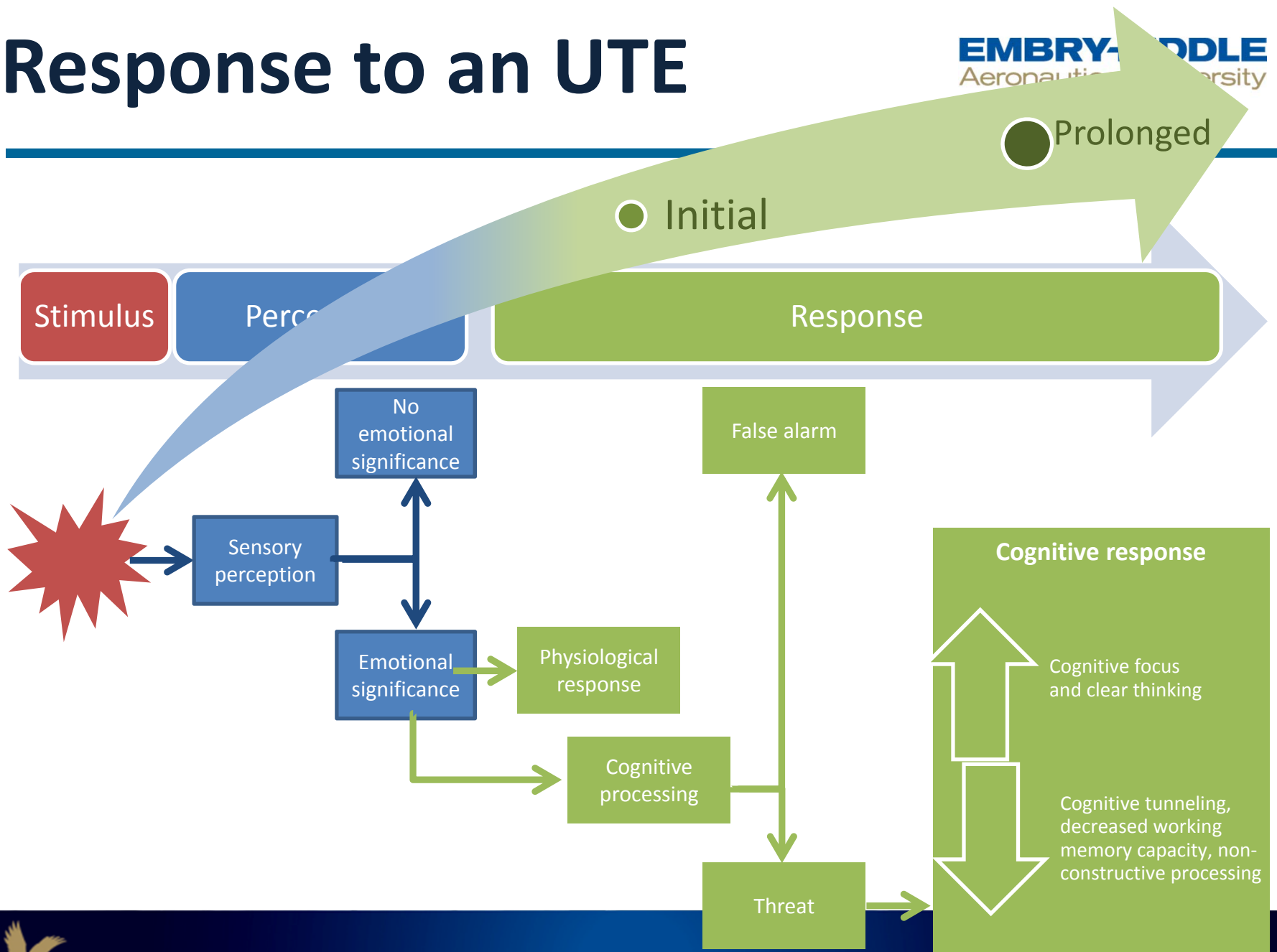
# Definitions

***Surprise:*** An emotion typically resulting from the violation of an expectation (a difference between expectation and reality).





# Response to an UTE



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# Research Purpose

- To develop a *detailed understanding* of professional PICs' experiences of an *extended, extreme* in-flight emergency, which were successfully overcome, focused on the cognitive processes employed.



# Research Focus

- *Cognitive processes in general, and aeronautical decision making specifically, to include risk assessment and problem solving.*



# ADM

- Codified Strategy (Rule-based)
- Associative Strategy
- Analytic Strategy



**Thank You**

**Questions?**

