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## Situation Awareness for Complex and Hazardous Systems

### Overview

Situation awareness plays a significant role in contributing to many mishaps. Approximately 70%-90% of human errors under accidents that occurred in complex and high technology system caused by situation awareness such as Three Miles Island, Piper Alpha oil platform explosion, Urberlingen Mid-air collision and many more. Understanding and improving situation awareness can reduce human decision making errors and ultimately to reduce incidents/accidents, improve system safety caused by human performance. Situation awareness can be formally defined as " the perception of elements in environment within a volume of space and time, comprehend and understand of their meaning and the projection correctly of their status in the near future". This interactive and comprehensive training workshop provides key principle and concepts of situation awareness (SA) applied in human decision making in complex and dynamics environment that aims to prevent human error and improve system safety. The 2 days training course provide a comprehensive set of practices and techniques required to improve situation awareness and reduce human errors that occurred in your complex and dynamic environment. This training and hand-on practical workshop is intentionally designed for those who responsible for or concerned with the critical decision making in complex and dynamics systems that aims to prevent operational error, increase system safety level, and reduce safety risks. This training workshop is targeted at various industries, not a specific one.


### Objectives

The 2 days interactive training workshop will enable you to learn how to

- Understand a key principles and concepts of situation awareness (SA) applied in complex and dynamics environment .
- Understand the human performance and limitations that impact vastly on situation awareness (SA).
- Identify the key contributing factors to loss of situation awareness (SA)
- Understand how to improve situation awareness.
- Identify the key contributing factors that impacts on situation awareness in complex and dynamics environment .
- Develop situation awareness training applied for complex and dynamics environment .
- Develop a design concept of situation awareness applied for human factor design in complex and dynamics environment .
- Develop a situation awareness threats checklists approach to prevent causes of Situation Awareness errors in your complex and dynamics environment .
- Develop a situation awareness improvement checklists to facilitate SA improvement in your complex and dynamics environment .

### Course Outlines

1. The Concepts of Situation Awareness (SA) and How is important for complex decision making in complex and hazardous systems
2. Safety cases of accidents in complex systems due to situation awareness
3. Situation Awareness Models
4. Individual and Team Situation Awareness
5. Situation Awareness Errors
6. Situation Awareness Errors in complex and hazardous systems (Safety Cases)
7. Contributing factors to Loss of Situation Awareness
8. Situation Awareness Improvement
9. Situation Awareness Training
10. Designing for Situation Awareness (SA) in complex and dynamics environment
11. Situation Awareness threats Checklists

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12. Situation Awareness Improvement Checklists
13. Hand-on exercises
14. Practical Case Study

### **Who should attend**

Management executive, supervisor, safety engineer, risk manager, and all participants who are responsible for or concerned with the management and control of risks, loss and damaged in complex and hazardous technology

### **Duration**

2 days

### **Key Points about This Course**

- You will learn how to understand the principles and concepts of situation awareness applied in complex and dynamics environment.
- You will learn how to understand and build situation awareness in your operations
- You will learn how to understand a loss of situation awareness in your operations
- You will learn how to understand the impact of human performance and limitations on situation awareness.
- You will learn how to understand the factors contributing to loss of situation awareness in complex and dynamics environment.
- You will learn how to improve situation awareness in complex and dynamics environment.
- You will learn how to develop effective situation awareness training applied in complex and dynamics environment.
- You will learn how to understand and apply the concept of designing for Situation Awareness (SA) perspectives approach to human factor design in complex and dynamics environment.
- You will learn how to develop Situation Awareness threats checklists to avoid and prevent loss of situation awareness.
- You will learn how to develop Situation awareness improvement checklists to improve situation awareness and reduce situation awareness errors.

### **Learning Outcomes from this course**

- You can understand a key principles and concepts of situation awareness (SA) applied in complex and dynamic environment.
- You can understand the human performance and limitations that impact vastly on situation awareness (SA).
- You can identify the key contributing factors to loss of situation awareness (SA)
- You can understand how to improve situation awareness.
- You can identify the key contributing factors that impacts on situation awareness in complex and hazardous systems.
- You can develop situation awareness training applied for your operations in complex and dynamic environment.
- You can develop a design concept of situation awareness applied for human factor design in your operations in complex and dynamic environment.
- You can develop a situation awareness threats checklists approach to prevent causes of Situation Awareness errors in your operations in complex and dynamic environment.
- You can develop a situation awareness improvement checklists approach to facilitate SA improvement in your operations in complex and dynamic environment.