

## Console Operator Situation Awareness (COSA) Designing an Effective COSA Overview Display

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### *Summary Overview*

Control room operators in the 21<sup>st</sup> century will likely be overseeing a process with 3,000-10,000 measured variables. The challenge is how to enable operators to maintain the necessary situational awareness to proactively operate the process, make effective decisions, and minimize errors. This challenge becomes even more urgent with the impending retirement of so many experienced operators.

An effective overview display enables the operator to rapidly assess the situation under her/his span of responsibility and determine where attention is needed. Most industry display standards today specify overview displays to provide this situational awareness. However, even when created, effective overview displays are rare.

The Center for Operator Performance (COP) has determined that, in many cases, the overview display is ineffective because of a lack of knowledge in how it should be created. This COP project defines the characteristics of an effective overview display, as well as methodologies for overview display design. A Console Operator Situation Awareness (COSA) overview display is an overview display that meets the COP-defined characteristics.

A COSA overview display is a single graphic display covering an operator's entire span of control. It contains the correct data in an appropriate format to answer, in four seconds or less, two key operating questions: "Is my process ok?" and "Is it running at the expected targets?" Facilities utilizing multi-page overview displays violate the **single** display criteria.

The COSA overview display is at the pinnacle (Level 1) of the display hierarchy for one operator's span of control. The overview display should map to that hierarchy. Sections of the overview should correspond to each display in the next level of the hierarchy (Level 2).

COSA display characteristics:

- Supports High-level Situation Awareness
- Contains appropriate Quantitative and Qualitative information
- Supports Key Decisions
- Uses Display Hierarchy and Navigation to other levels of displays
- Sections corresponding to Level 2 displays should be limited to 10 or less
- Incorporates Spatially coded organization
- Uses Human Factors Conventions and Coding
- Incorporates Display Styles to match decisions

For more information, contact us through our website, [www.operatorperformance.org](http://www.operatorperformance.org), or email [tkindervater@operatorperformance.org](mailto:tkindervater@operatorperformance.org).