

Claims:

1. A method for providing context based assistance to a control system operator, the method comprising:

detecting a first instance of a control system event;

determining event complexity corresponding to the first instance of the control system event, wherein said determination of event complexity is based on a set of predefined rules for ascertaining event complexity; and

responsive to determining that event complexity corresponding to the first instance of the control system event exceeds a predefined complexity threshold:

retrieving a set of operator inputs received at a control system in response to a detected second instance of the control system event, wherein the second instance of the control system event was detected prior in time to the detected first instance of the control system event; and

communicating to the control system operator, information identifying a set of operator inputs for responding to the detected first instance of the control event, wherein the identified operator inputs are a sub-set of the retrieved set of operator inputs, wherein the determination of event complexity is based on information relating to instances of the control system event previously encountered by the control system operator.

2. The method as claimed in claim 1, wherein the determination of event complexity is based on one or more of:

a number of times that the control system operator has previously encountered instances of the detected control system event;

deviations by the control system operator from operator best practices, in response to previously encountered instances of the detected control system event; and

a number of detected alarm events.

3. The method as claimed in claim 1, wherein the determination of event complexity is based on a determination of one or both of operator stress and operator fatigue.

4. The method as claimed in claim 3, wherein the determination of event complexity is based on one or more of:

a number of control system processes that the control system operator is monitoring;

a number of alarms or event notifications that occur simultaneously;

a length of time for which the control system operator has been on shift;

a total number of control system events of a predefined type that the control system operator has addressed during a shift;

physiological information corresponding to the control system operator; and

information describing rest or physical activity undertaken by the control system operator within a predefined time window.

5. The method as claimed in claim 1, further comprising monitoring operator inputs received from the control system operator for compliance with operator inputs identified within the information communicated to the control system operator.

6. The method as claimed in claim 5, comprising responding to deviations between the monitored operator inputs and the operator inputs identified within the information communicated to the control system operator, by communicating supplemental information identifying operator inputs for responding to the detected first instance of the control event.

7. The method as claimed in claim 1, wherein a mode of communication for communicating information to the control system operator is selected based on the determined event complexity corresponding to the first instance of the control system event.

8. The method as claimed in claim 1, wherein the set of operator inputs received at the control system in response to the detected second instance of the control system events are inputs received at the control system from a control system operator having a predefined set of qualifications.

9. A system for providing context based assistance to a control system operator of a control system comprising one or more processors, sensors or actuators, the system comprising:

a processor implemented operator interface;

a control system event monitor configured to detect a first instance of a control system event;

a complexity analyzer configured to determine event complexity corresponding to the first instance of the control system event, wherein said determination of event complexity is based on a set of predefined rules for ascertaining event complexity;

an assistance controller configured to respond to a determination that event complexity corresponding to the first instance of the control system event exceeds a predefined complexity threshold, by:

retrieving a set of operator inputs received at the control system in response to a detected second instance of the control system event, wherein the second instance of the control system event was detected prior in time to the detected first instance of the control system event; and

communicating to the control system operator, information identifying a set of operator inputs for responding to the detected first instance of the control event, wherein the identified operator inputs are a sub-set of the retrieved set of operator inputs,

wherein the complexity analyser is configured to determine event complexity based on information relating to instances of the control system event previously encountered by the control system operator.

10. The system as claimed in claim 9, wherein the complexity analyser is configured to determine event complexity based on one or more of:

a number of times that the control system operator has previously encountered instances of the detected control system event;

deviations by the control system operator from operator best practices, in response to previously encountered instances of the detected control system event; and

a number of detected alarm events.

11. The system as claimed in claim 9, wherein the complexity analyser is configured to determine event complexity based on a determination of one or both of operator stress and operator fatigue.

12. The system as claimed in claim 11, wherein the complexity analyser is configured to determine event complexity based on one or more of:

a number of control system processes that the control system operator is monitoring;

a number of alarms or event notifications that occur simultaneously;

a length of time for which the control system operator has been on shift;

a total number of control system events of a predefined type that the control system operator has addressed during a shift;

physiological information corresponding to the control system operator; and

information describing rest or physical activity undertaken by the control system operator within a predefined time window.

13. The system as claimed in claim 9, further configured to monitor operator inputs received from the control system operator for compliance with operator inputs identified within the information communicated to the control system operator.

14. The system as claimed in claim 13, wherein the assistance controller is configured to respond to deviations between the monitored operator inputs and the operator inputs identified within the information communicated to the control system operator, by communicating supplemental information identifying operator inputs for responding to the detected first instance of the control event.

15. The system as claimed in claim 9, wherein a mode of communication for communicating information to the control system operator is selected based on the determined event complexity corresponding to the first instance of the control system event.

16. The system as claimed in claim 9, wherein the set of operator inputs received at the control system in response to the detected second instance of the control system events are inputs received at the control system from a control system operator having a predefined set of qualifications.

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