

[0009a] According to an aspect, there is provided a system comprising: an enterprise-level network architecture including a communication system; a number of tools in communication with the communication system and configured to perform a number of tasks using a number of process parameters, and collect process data while performing the number of tasks; wherein the number of tools further comprises a sensor system configured to collect the process data while the number of tools perform the number of tasks; and a central server in communication with the communication system and configured to: provide the process parameters for the number of tools; monitor the number of tools as the number of tools perform the number of tasks; receive the process data collected by the number of tools as the number of tools perform the number of tasks using the communication system; analyze the process data received from the number of tools as the number of tools perform the number of tasks; and determine whether a process parameter update is needed while the number of tools perform the number of tasks; wherein the central server is configured to send a number of process parameter updates to the number of tools using the communication system; and wherein the number of tools further comprises a data processing system configured to receive the number of process parameter updates from the central server while the number of tools perform the number of tasks.

[0009b] According to another aspect, there is provided a method for tool management within an enterprise-level network architecture including a communication system, the method comprising: monitoring tool processes for a number of tools in communication with the communication system as the number of tools perform a number of tasks, wherein the number of tools collect process data while performing the number of tasks, and wherein the monitoring is performed at a central location using the communication system; providing process parameters for the number of tools; receiving the process data for the number of tools during the tool processes at the central location using the communication system; wherein the number of tools includes a number of sensor systems, and wherein the process data is collected by the number of tools using the number of sensor systems while the number of tools perform the number of tasks; analyzing the process data collected from the number of tools during the tool processes; determining whether a process parameter update is needed for the number of tools while the number of tools perform the number of tasks; and responsive to a determination that the process parameter update is needed, sending a number of process parameter updates to the number of tools from the central location using the communication system, wherein the number of process parameter updates is sent to the number of tools while the number of tools are in operation.

CLAIMS:

What is claimed is:

1. A system comprising:

an enterprise-level network architecture including a communication system;

a number of tools (120) in communication with the communication system and configured to perform a number of tasks using a number of process parameters (326), and collect process data while performing the number of tasks; wherein

the number of tools (120) further comprises a sensor system (318) configured to collect the process data while the number of tools (120) perform the number of tasks; and

a central server (108) in communication with the communication system and configured to:

provide the process parameters (326) for the number of tools (120);

monitor the number of tools (120) as the number of tools (120) perform the number of tasks;

receive the process data collected by the number of tools (120) as the number of tools (120) perform the number of tasks using the communication system;

analyze the process data received from the number of tools (120) as the number of tools (120) perform the number of tasks; and

determine whether a process parameter update is needed while the number of tools (120) perform the number of tasks;

wherein the central server (108) is configured to send a number of process parameter updates to the number of tools (120) using the communication system; and

wherein the number of tools (120) further comprises a data processing system (124) configured to receive the number of process parameter updates from the central server (108) while the number of tools (120) perform the number of tasks.

2. The system of claim 1, wherein the data processing system (124) is configured to send the process data to the central server (108).

3. The system of any preceding claim, wherein the number of tools (120) is selected from at least one of a contour drilling machine, a drill motor, and a fastener.

4. A method for tool management within an enterprise-level network architecture including a communication system, the method comprising:

monitoring tool processes for a number of tools (120) in communication with the communication system as the number of tools (120) perform a number of tasks, wherein the number of tools (120) collect process data while performing the number of tasks, and wherein the monitoring is performed at a central location (104) using the communication system;

providing process parameters (326) for the number of tools (120);

receiving the process data for the number of tools (120) during the tool processes at the central location using the communication system; wherein

the number of tools (120) includes a number of sensor systems (318), and wherein the process data (332)

is collected by the number of tools (120) using the number of sensor systems (318) while the number of tools (120) perform the number of tasks;

analyzing the process data (332) collected from the number of tools (120) during the tool processes;

determining whether a process parameter update is needed for the number of tools (120) while the number of tools (120) perform the number of tasks; and

responsive to a determination that the process parameter update is needed, sending a number of process parameter updates to the number of tools (120) from the central location (104) using the communication system, wherein the number of process parameter updates is sent to the number of tools (120) while the number of tools are in operation.

5. The method of claim 4, wherein the process parameter update is needed if the process data (332) indicates that a tool (300) in the number of tools (120) is not operating within a given parameter.

6. The method of claim 4 further comprising:

determining whether a process update (346) is received at the number of tools (120); and

responsive to a determination that the process update is received, updating a number of process parameters (326) at the number of tools (120).

7. The method of claim 6 further comprising:

controlling a tool mechanism (300) to perform a task using the number of updated process parameters (326);

collecting process data (332) during task performance; and

sending the process data (332) collected to the central location (104) using the communication system.

8. The method of claims 4-7, wherein the number of tools (120) is selected from at least one of a contour drilling machine (130), a drill motor (130), and a fastener (134), and wherein the number of tools is a number of nodes on the network (102).