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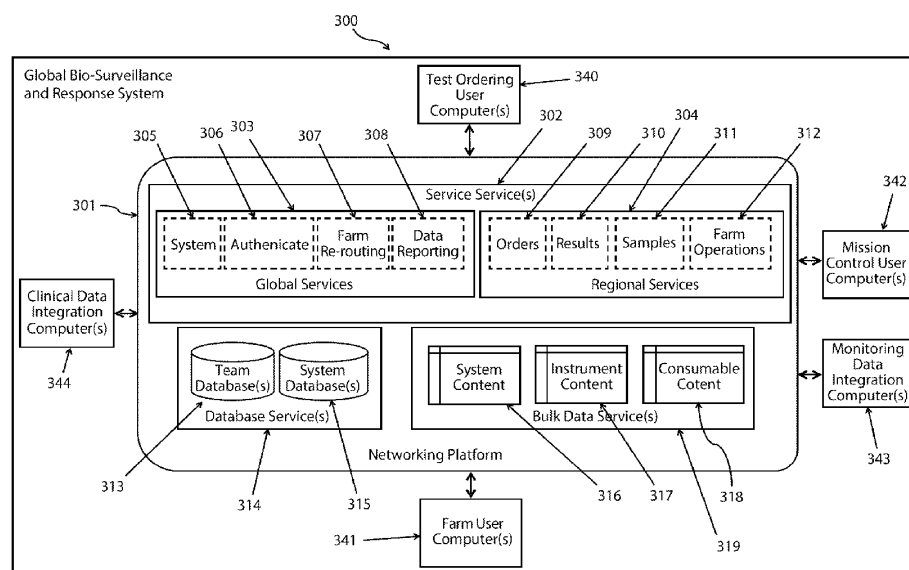


FIG. 3A

(57) Abstract: Provided herein are systems, methods, and apparatuses for providing a real-time global bio-surveillance and response solution. The systems and apparatuses may include one or more sentinel subsystems and one or more surge subsystems that each include a real-time, cloud-based, distributed, interconnected set of hardware, software, and/or firmware for comprehensive surveillance, complete detection, and immediate response various to biological, chemical, and/or bio-chemical anomalies, for example, a new or emerging pathogen or other health condition.

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