

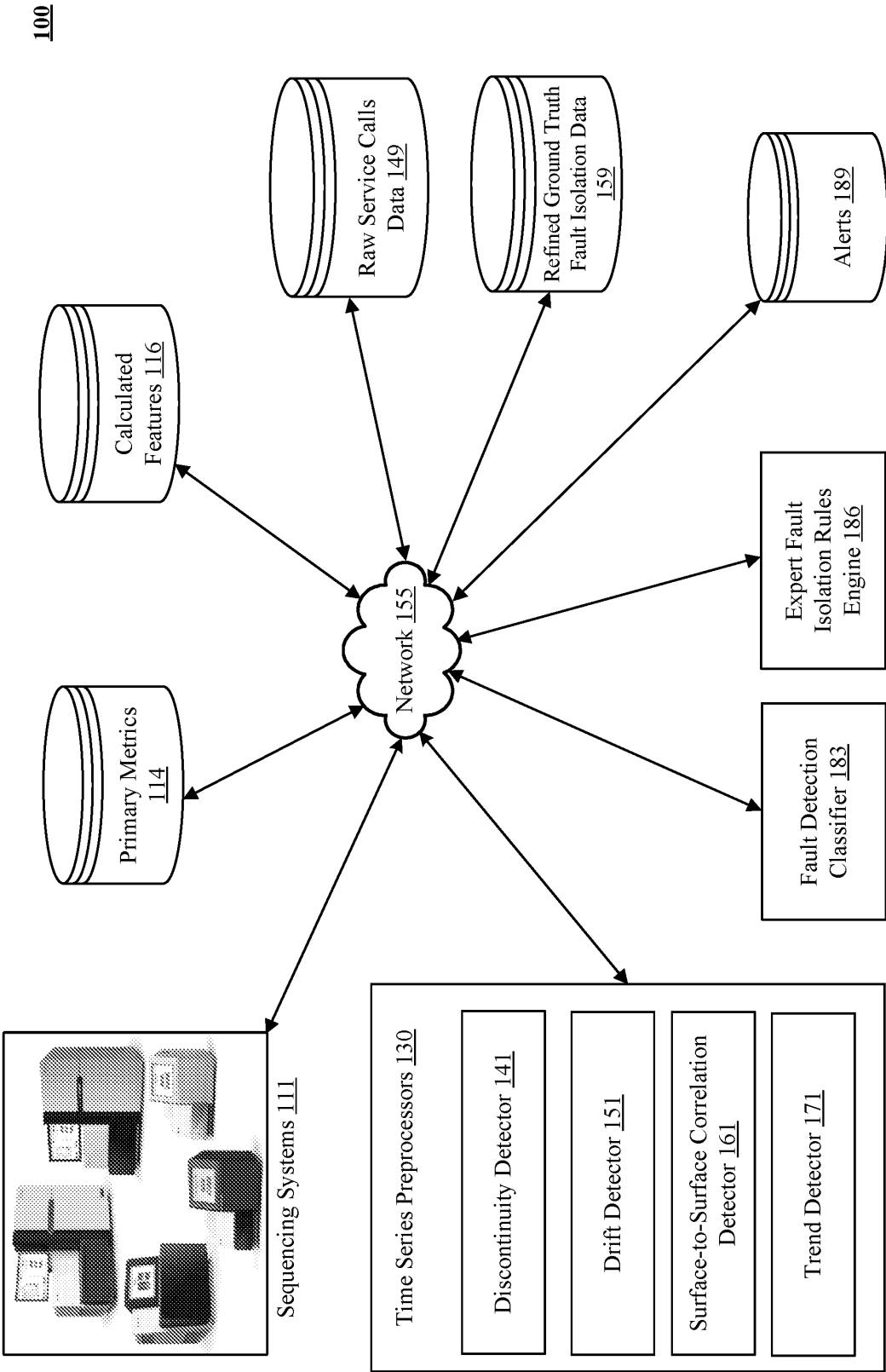


FIG. 1

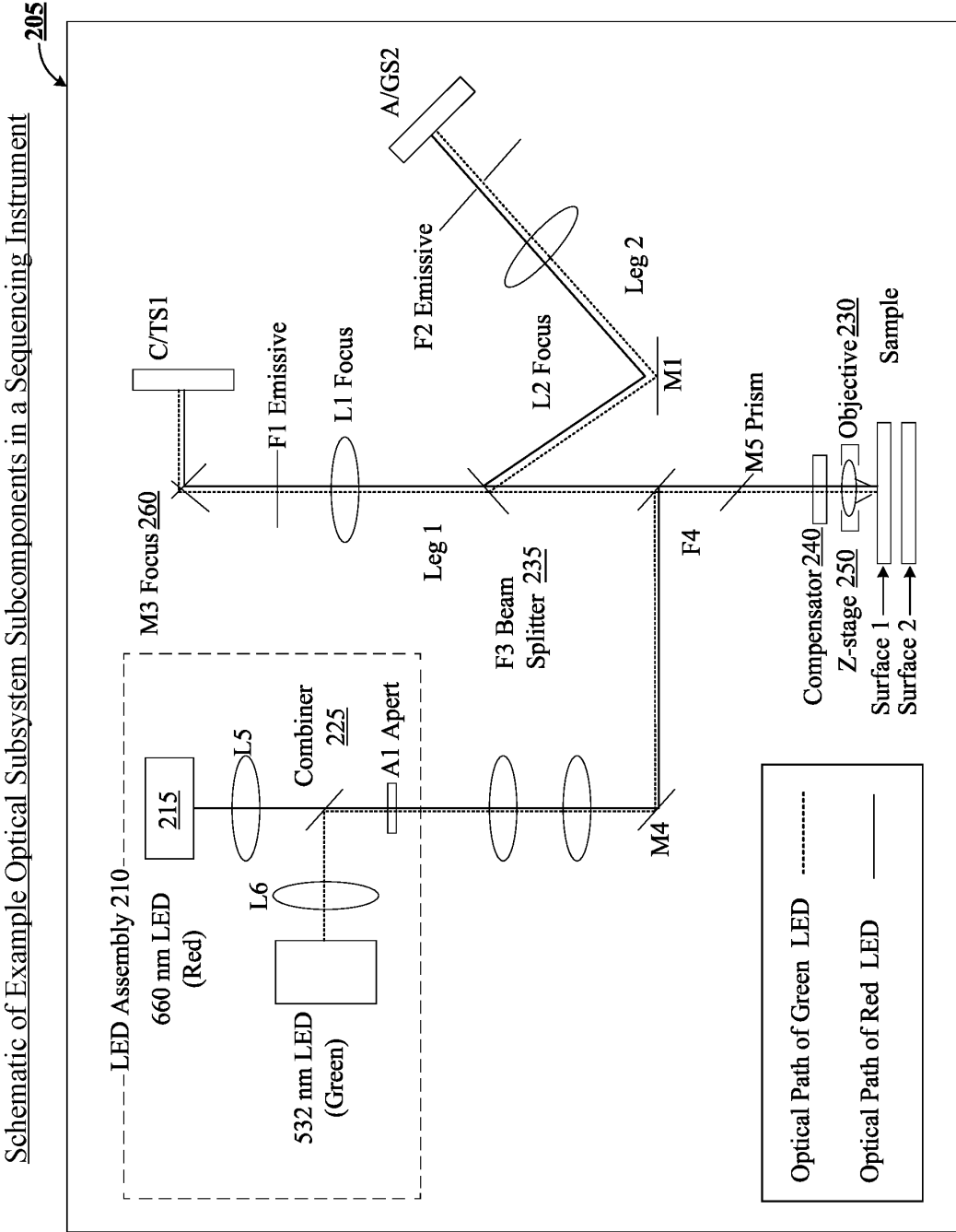


FIG. 2A

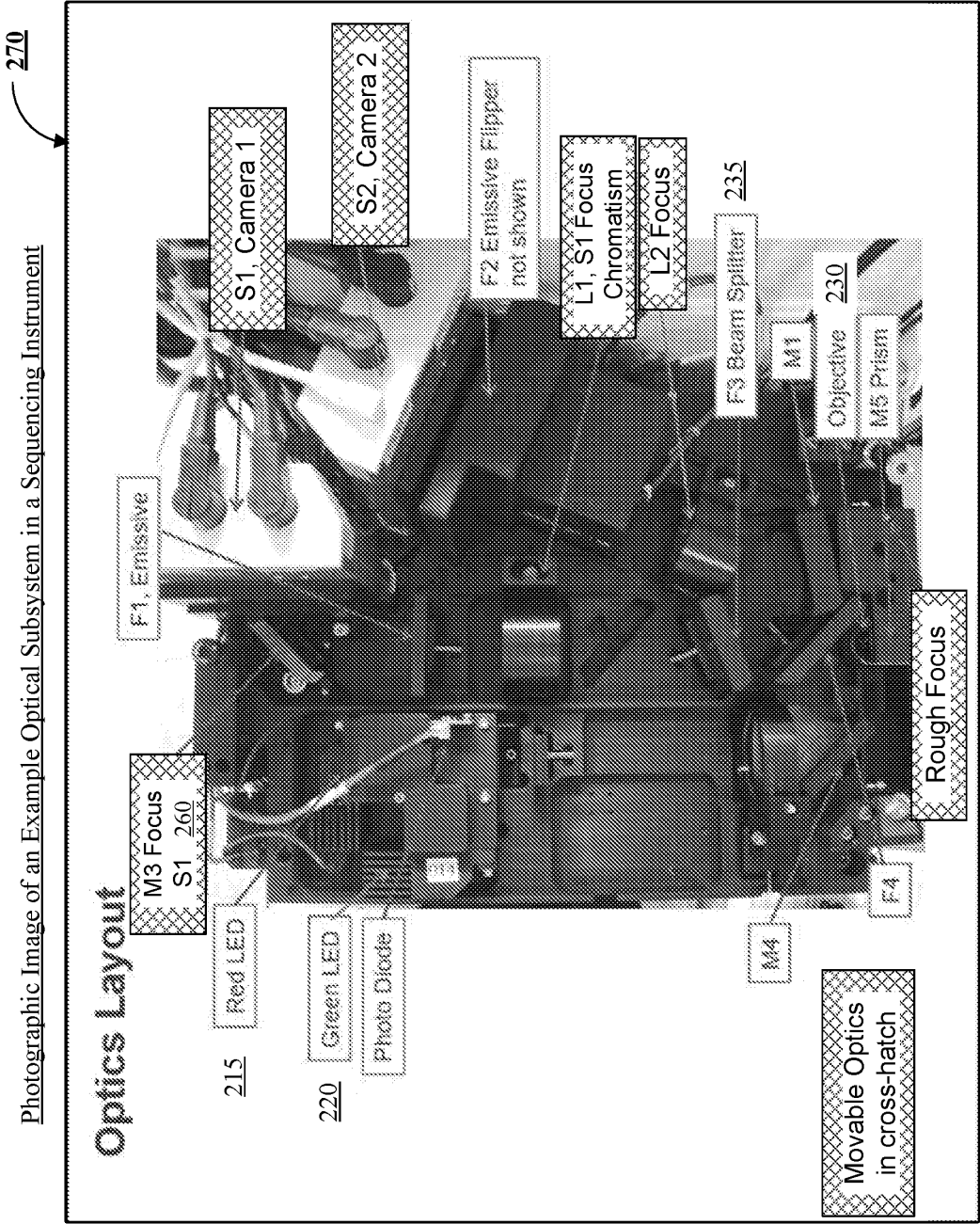


FIG. 2B

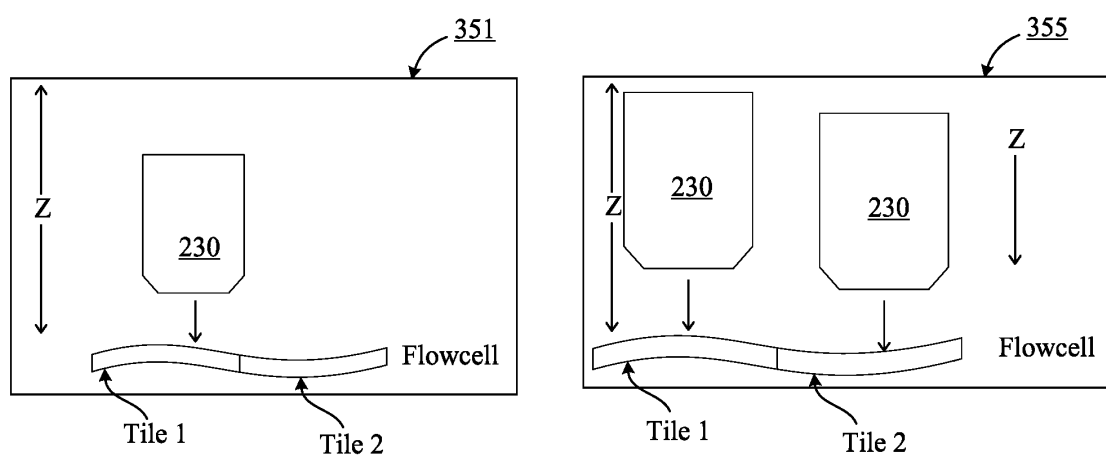
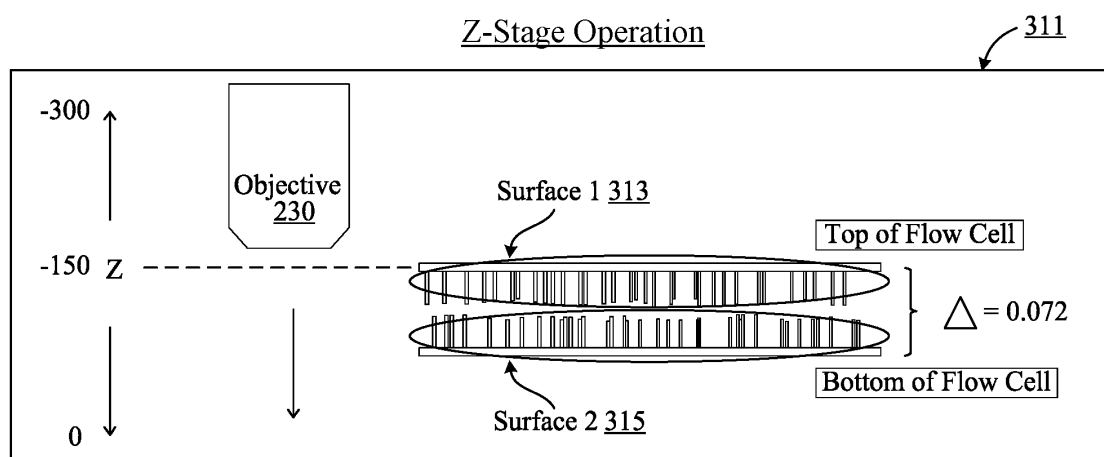


FIG. 3A

Compensator Operation

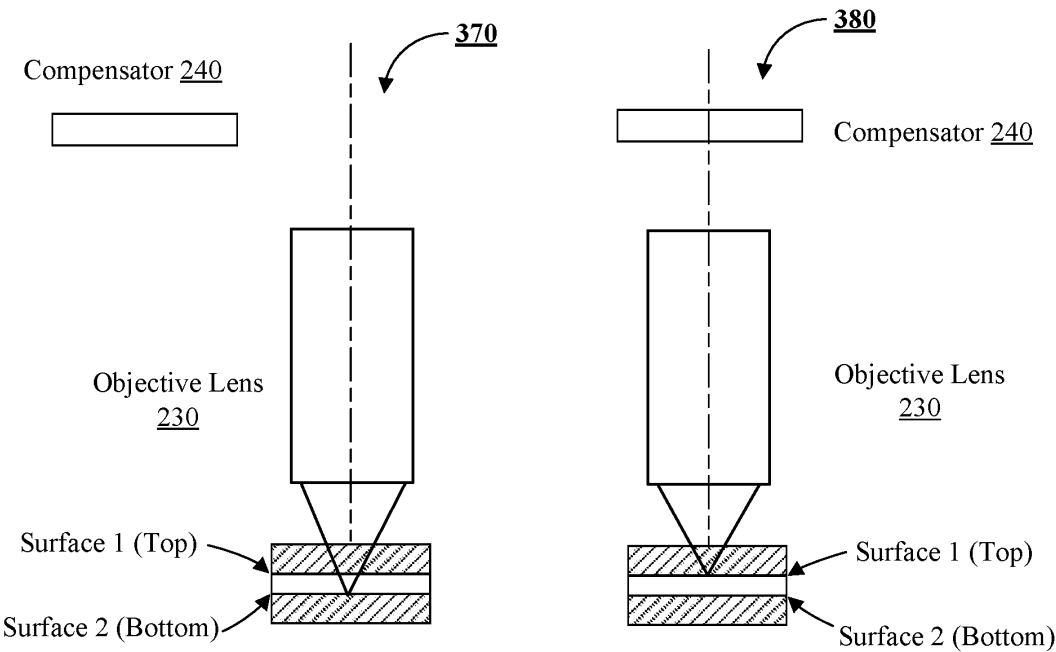


FIG. 3B

Focus Scores Time Series Illustrating Signal Discontinuity

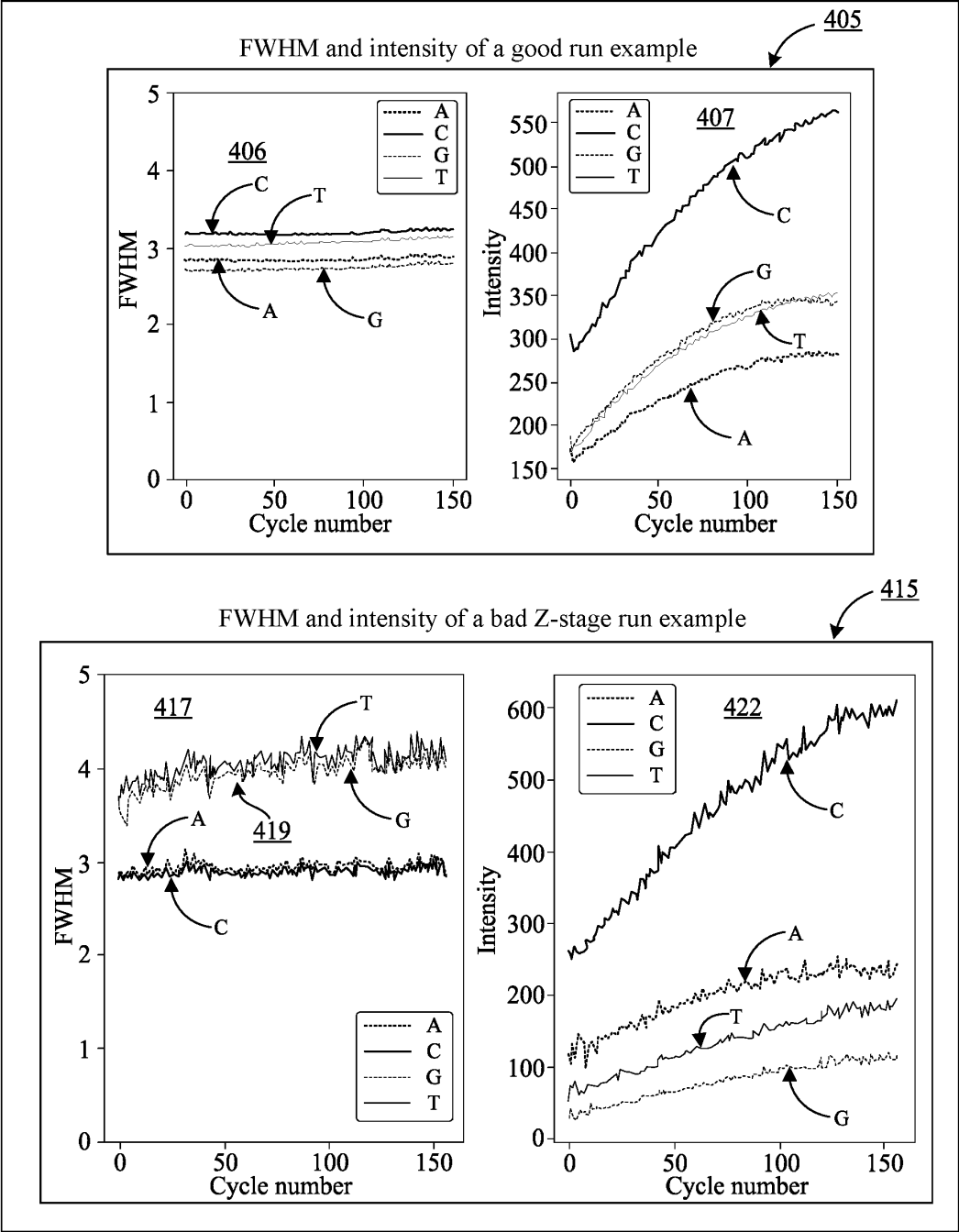


FIG. 4A

Focus and Intensity Scores Time Series For Top and Bottom Surfaces of aFlow Cell Illustrating Signal Discontinuity and Lack of Expected Correlation

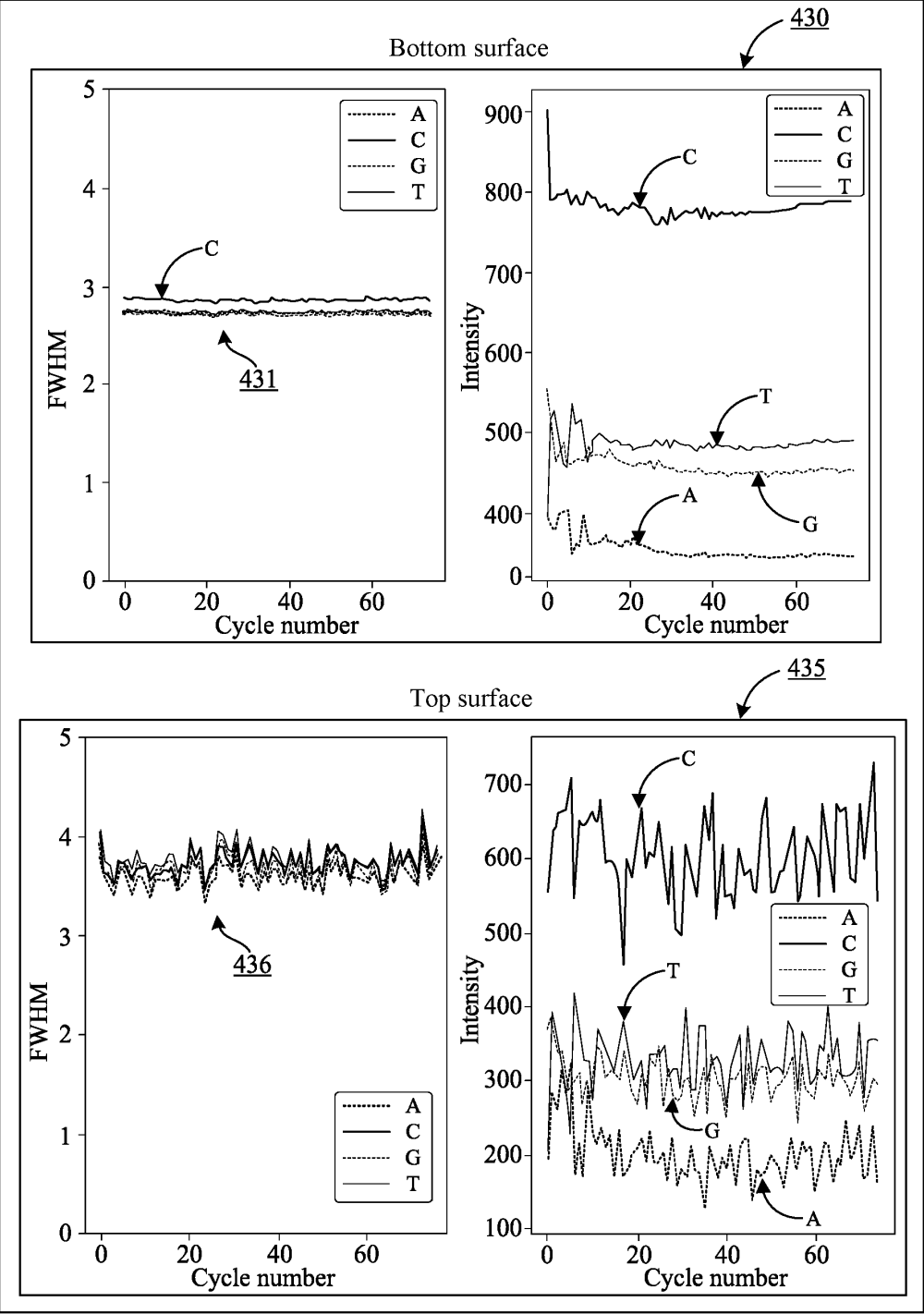


FIG. 4B

Focus and Intensity Scores Time Series For Top and Bottom Surfaces of a Flow Cell
Illustrating Signal Trend Signal Discontinuity and Lack of Expected Correlation

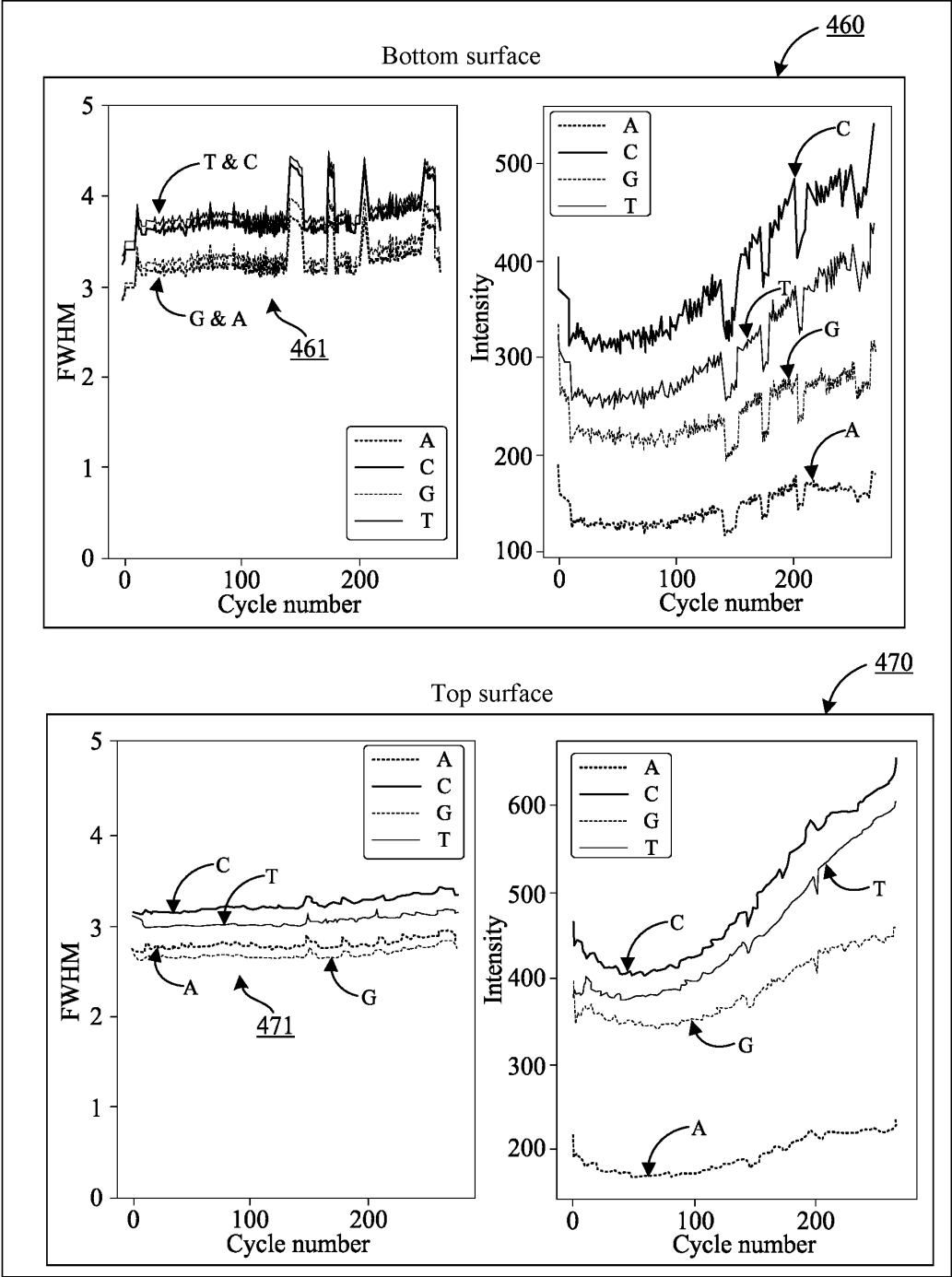


FIG. 4C

Focus Scores Time Series Illustrating M3 Drift

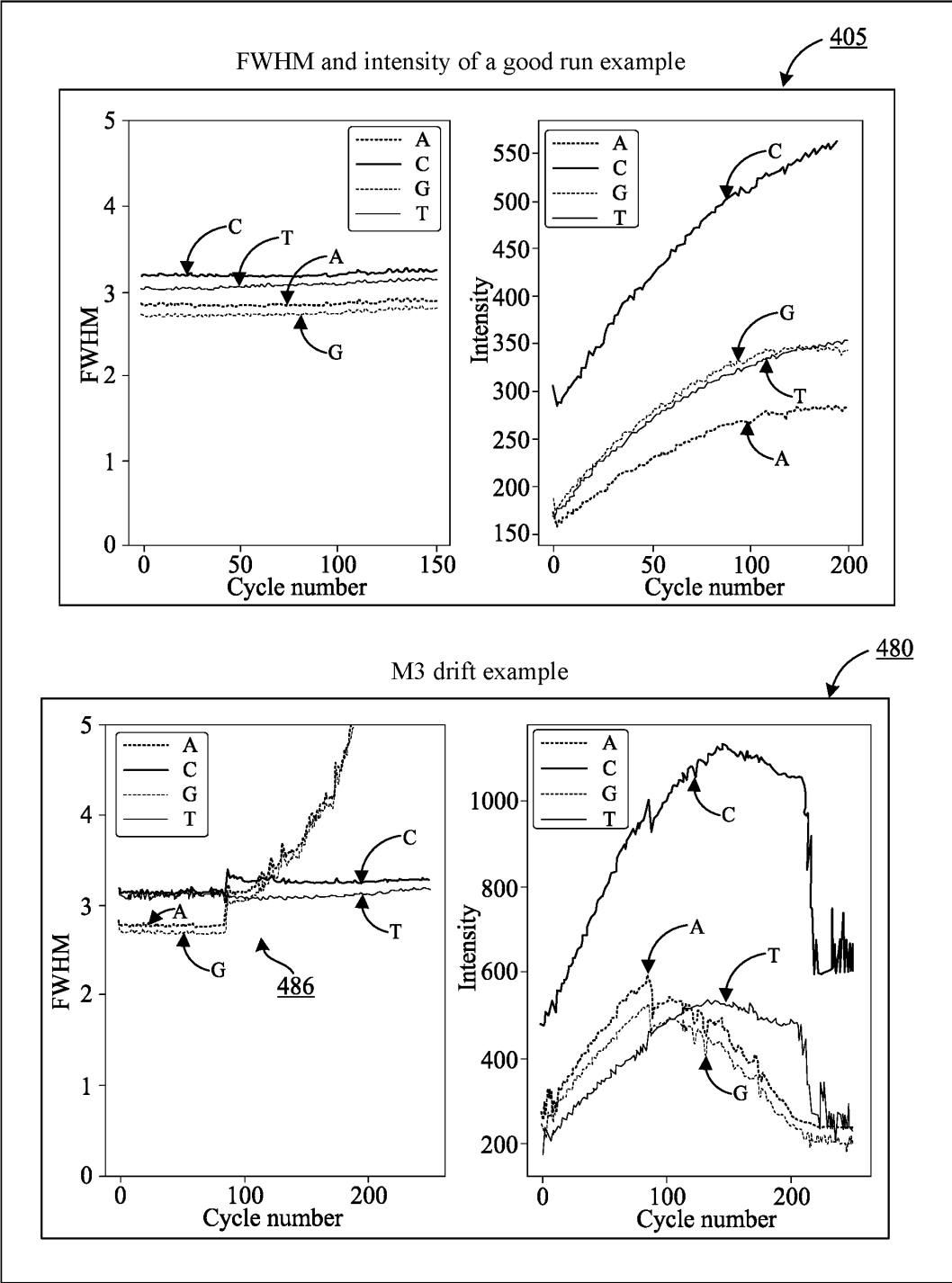


FIG. 4D

Time Series Illustrating Mid Process Vibration

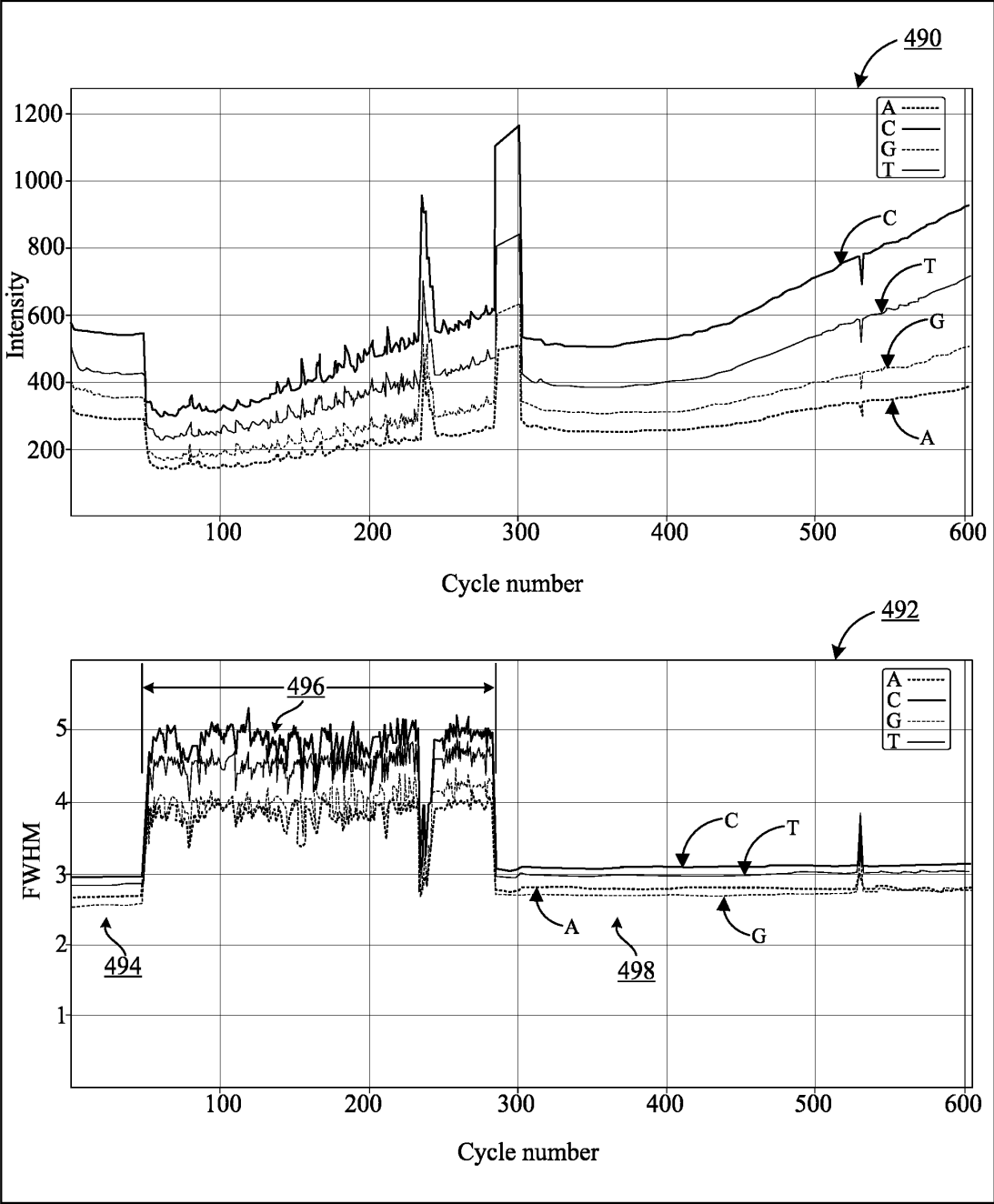


FIG. 4E

Training Architecture

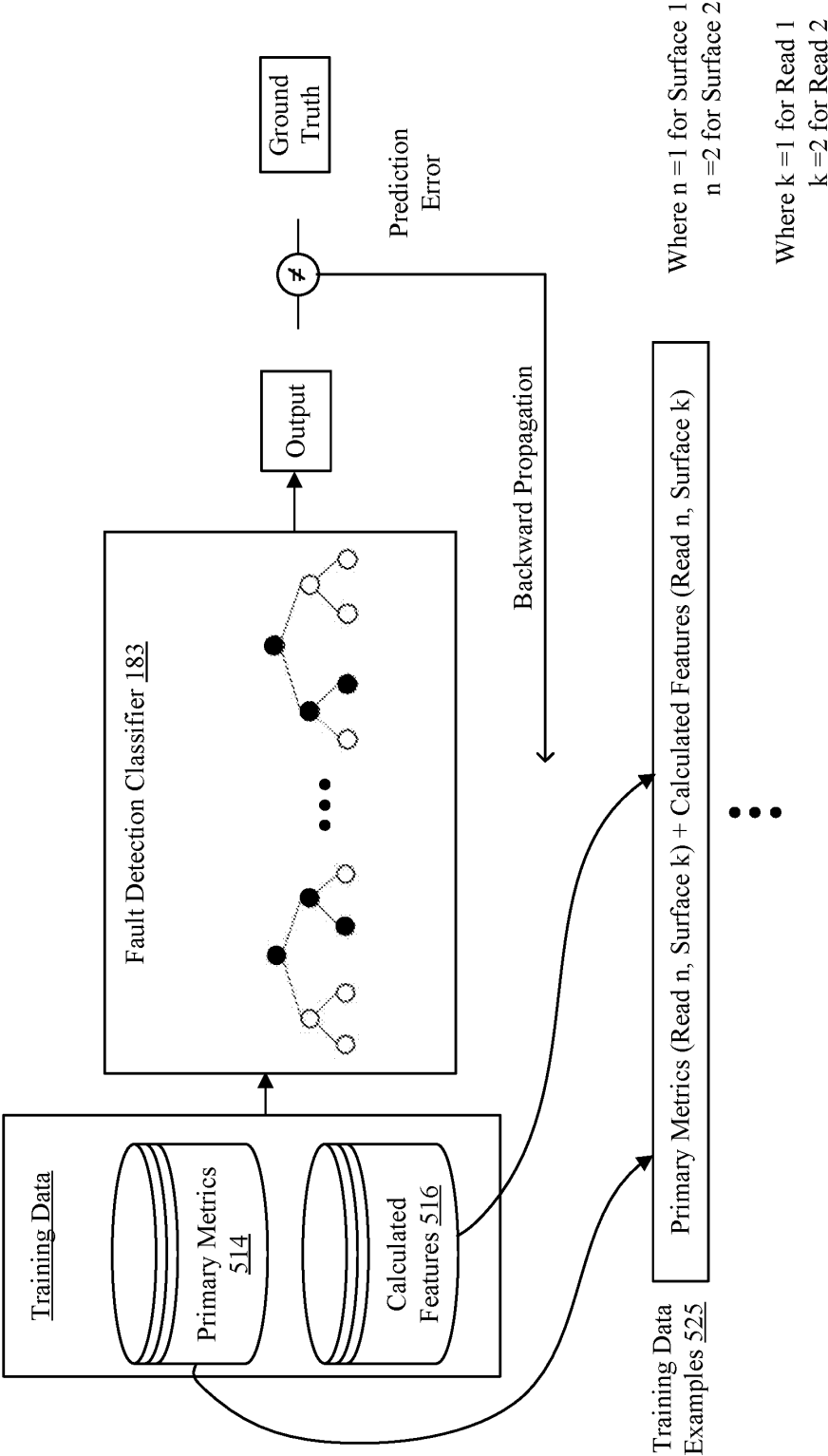


FIG. 5A

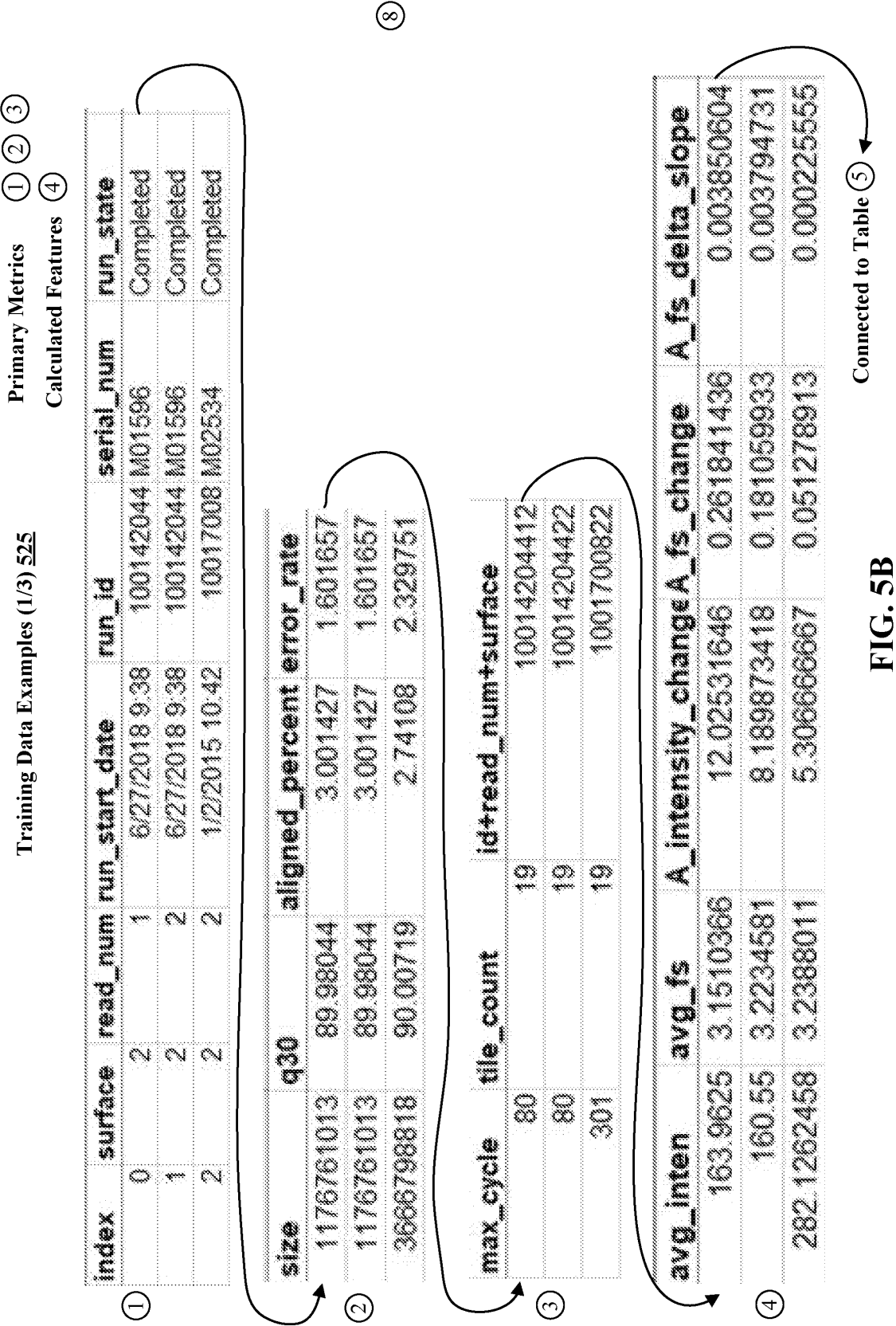


FIG. 5B

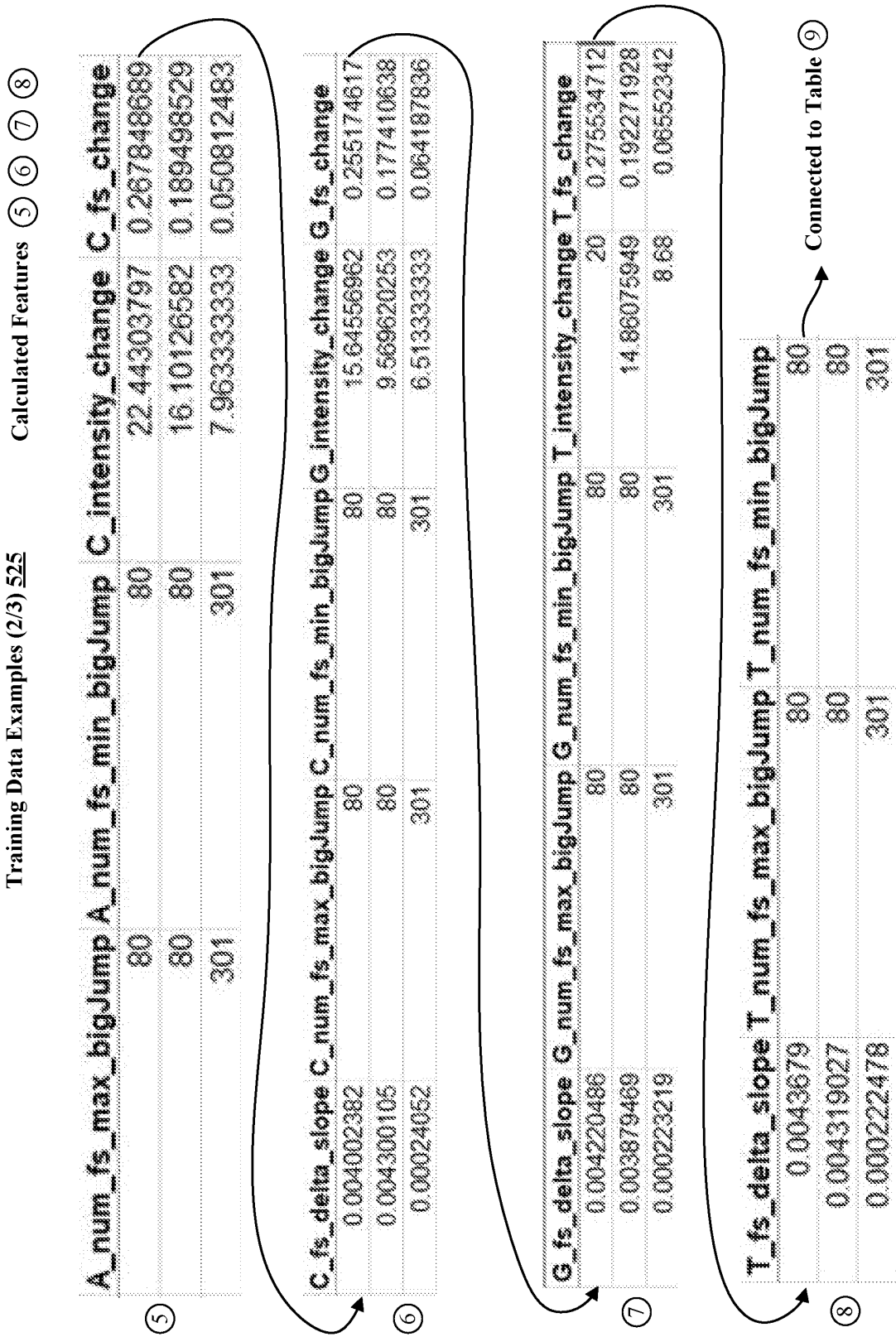


FIG. 5C

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FIG. 5D

Production Architecture

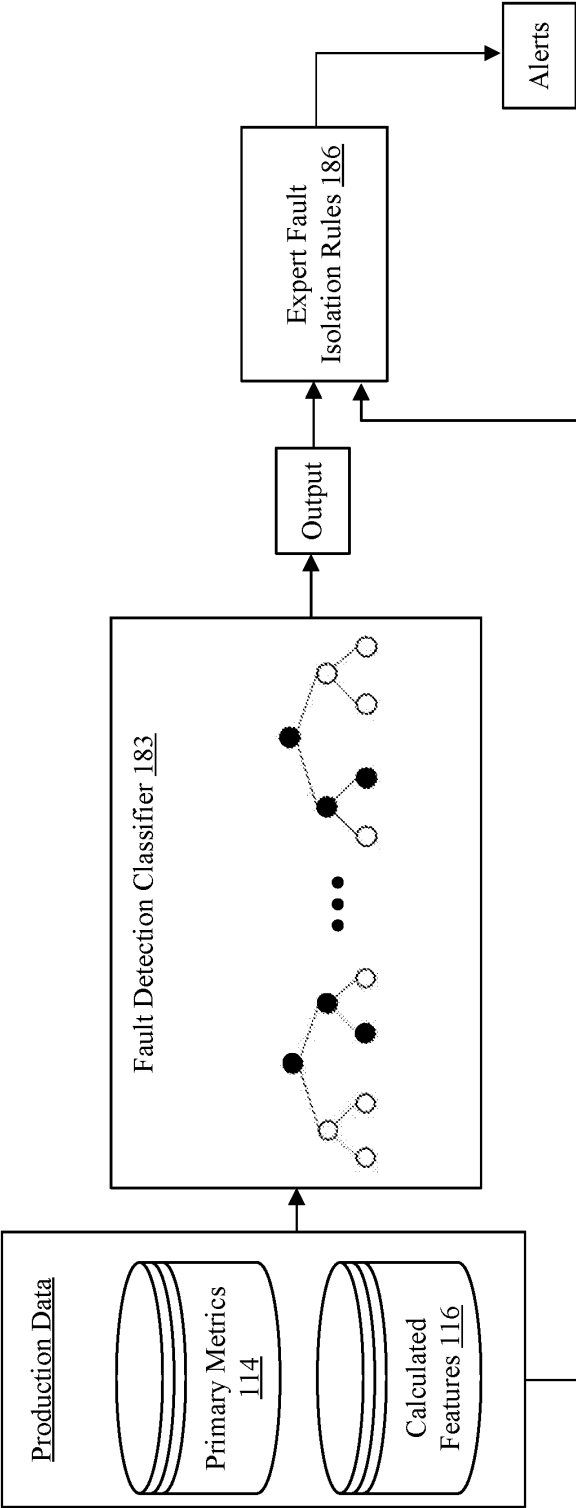
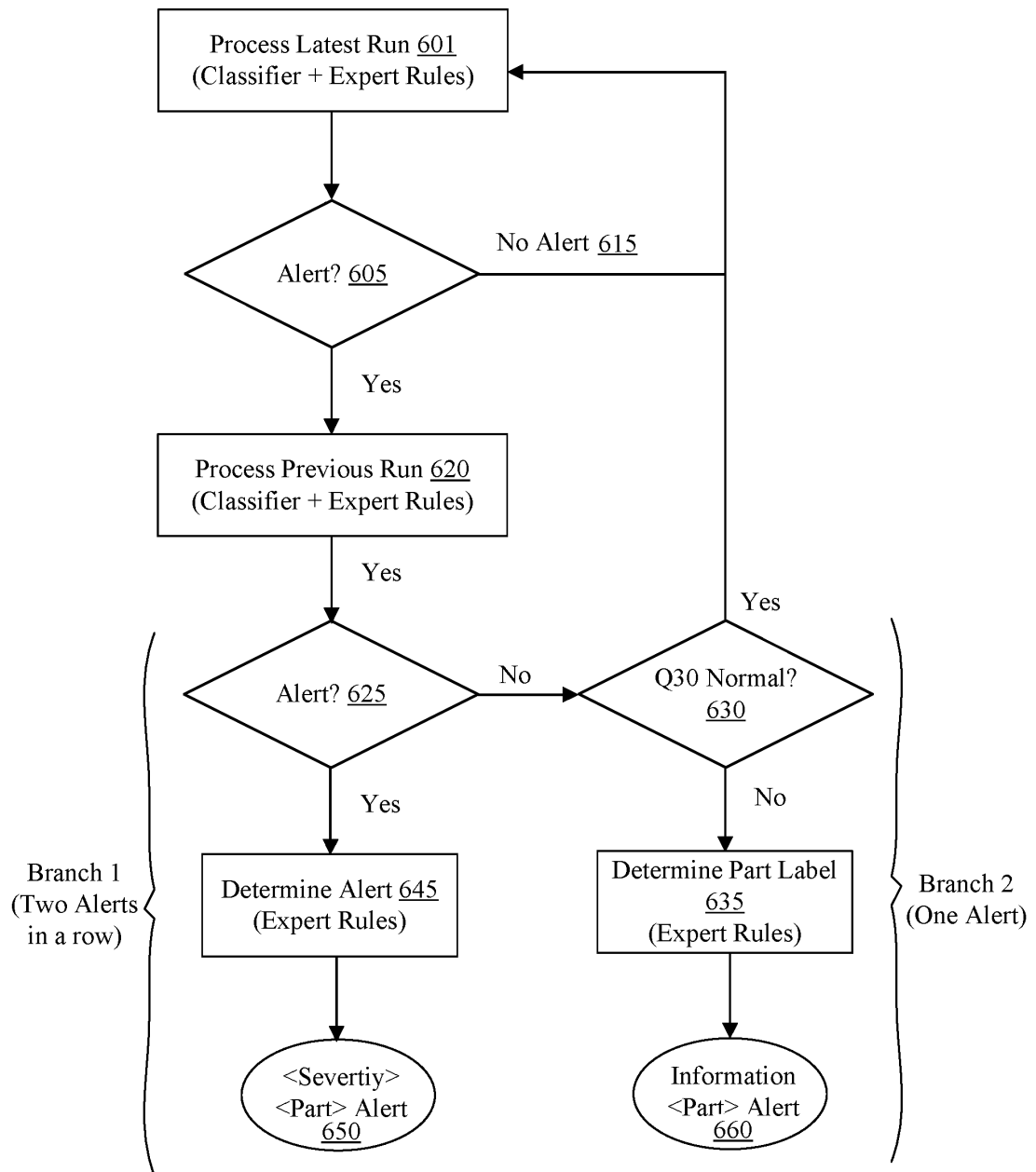
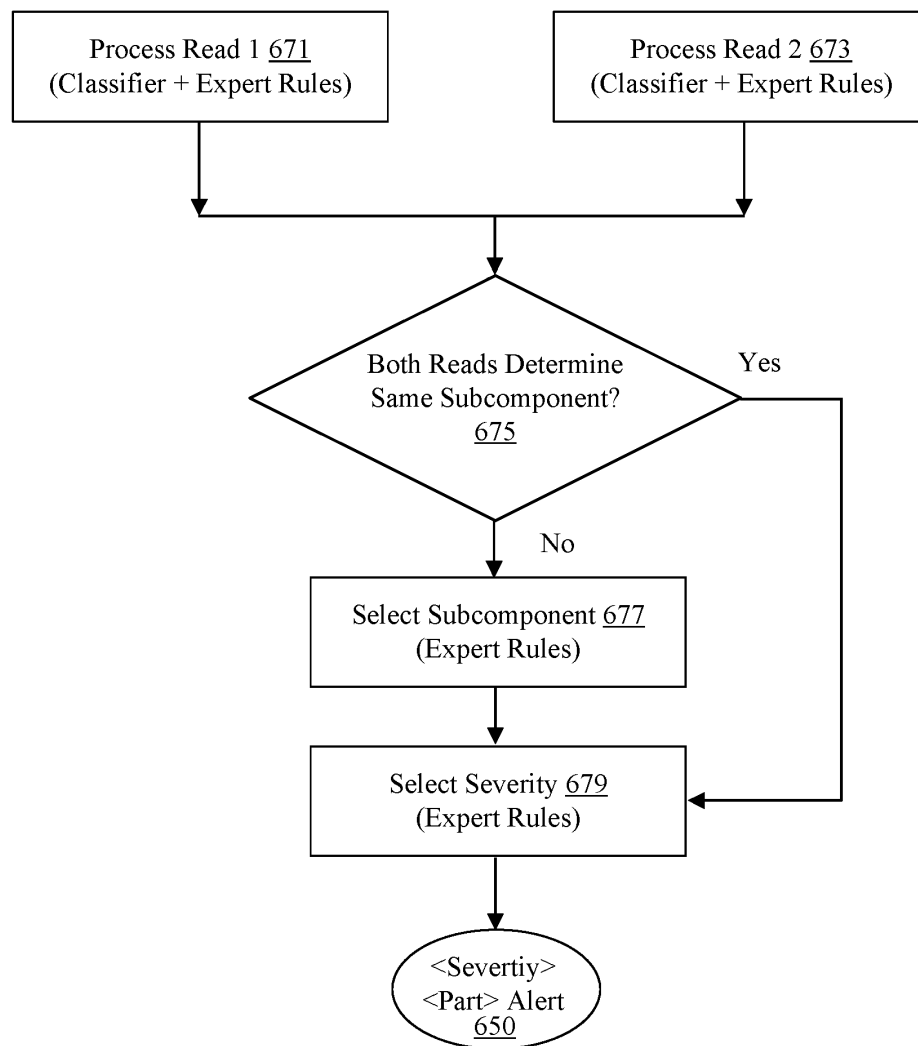


FIG. 5E

Expert System Architecture (1/3)
Classifying a Sequencing Run

**FIG. 6A**

Expert System Architecture (2/3)Process Sequencing Run 601 or 620**FIG. 6B**

Expert System Architecture (3/3)

Applying Expert Rules To Multiple Signal Channels from a Read in a Sequencing Run

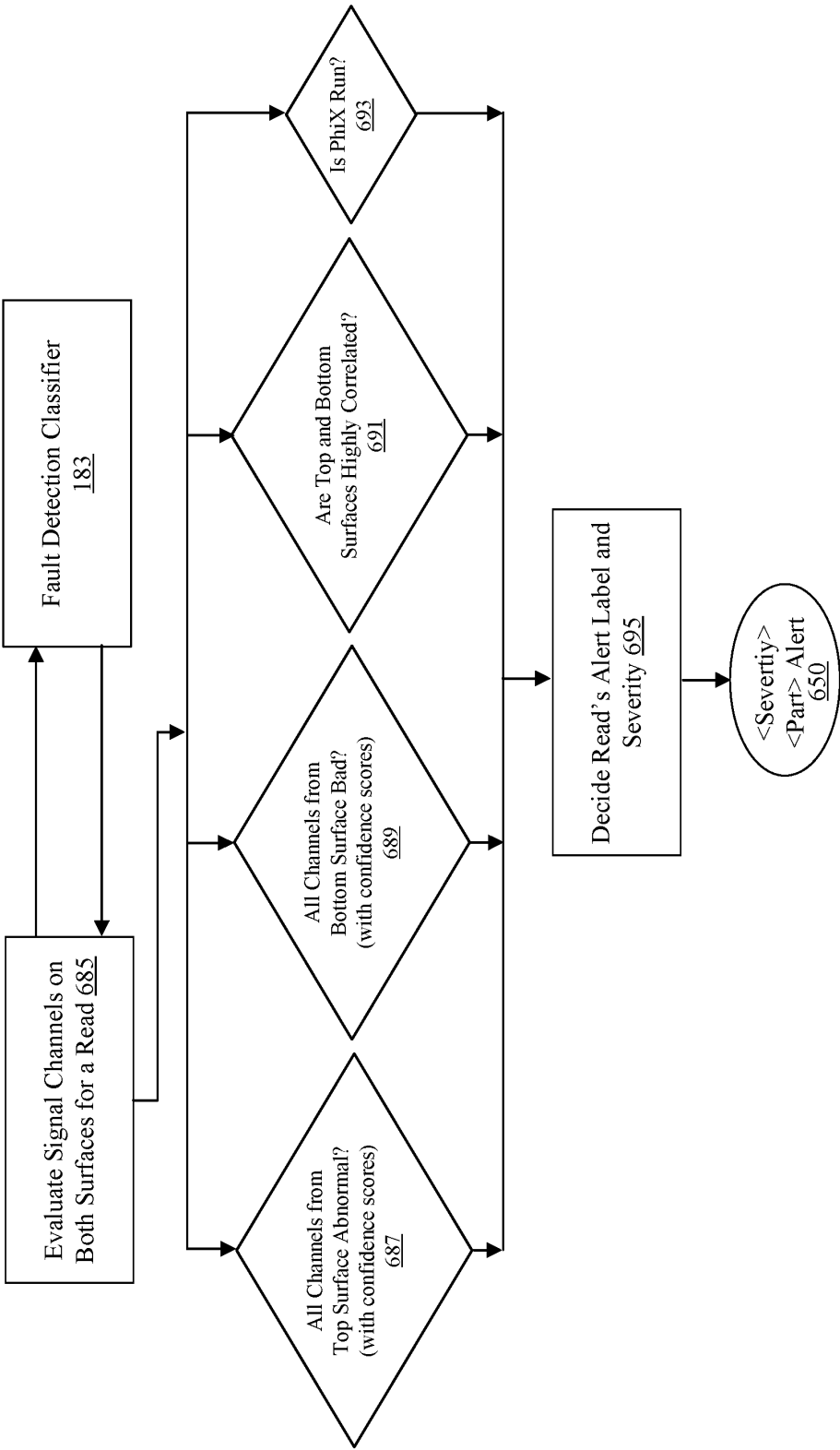


FIG. 6C

Examples of Alerts Generated

Component	Severity	Alert summary	Alert Details
M3	Info ⓘ	Potential Optics problem. M3 is more likely to be the cause, < Additional Alert Details>	- Problem detected in one Camera.
	Warning ⚠	Potential M3 problem. < Additional Alert Details>	- Problem detected in one Camera. Q30 out of spec. or- FWHM drift detected in one camera
Z Stage	Info ⓘ	Potential Optics problem. Z-stage is more likely to be the cause, < Additional Alert Details>	- Problem detected in one LED color pair
	Warning ⚠	Potential Z-stage problem. < Additional Alert Details>	- Problem detected in one LED color pair. Q30 out of spec. or- Problem detected in FWHM only on top surface
Compensator	Info ⓘ	Potential Optics problem. Compensator or Z-stage is more likely to be the cause, < Additional Alert Details>	- Problem detected in FWHM only on bottom surface
	Warning ⚠	Potential Compensator problem, Z-stage might bet at fault as well. < Additional Alert Details>	- Problem detected in FWHM only on bottom surface.

Info Next Step : Monitor performance and investigate if no-site. It is more likely to be related to the part flagged.
Critical Next Step : A case is created automatically, check the optics system, the problem is more likely to be related to the part flagged.

FIG. 7A

Types of Alerts

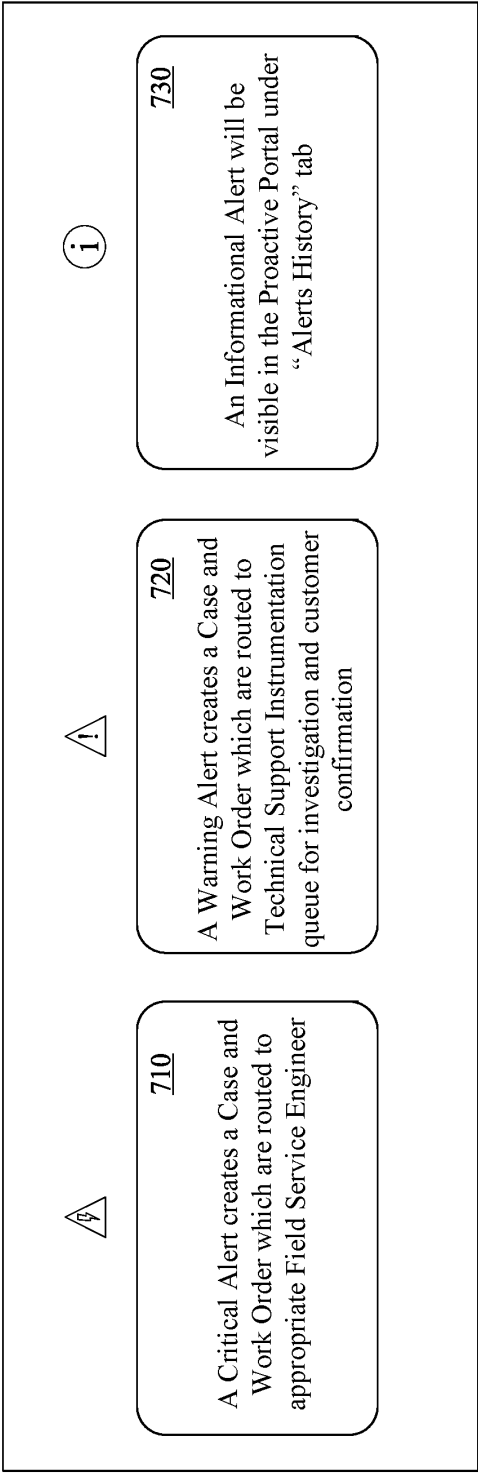


FIG. 7B

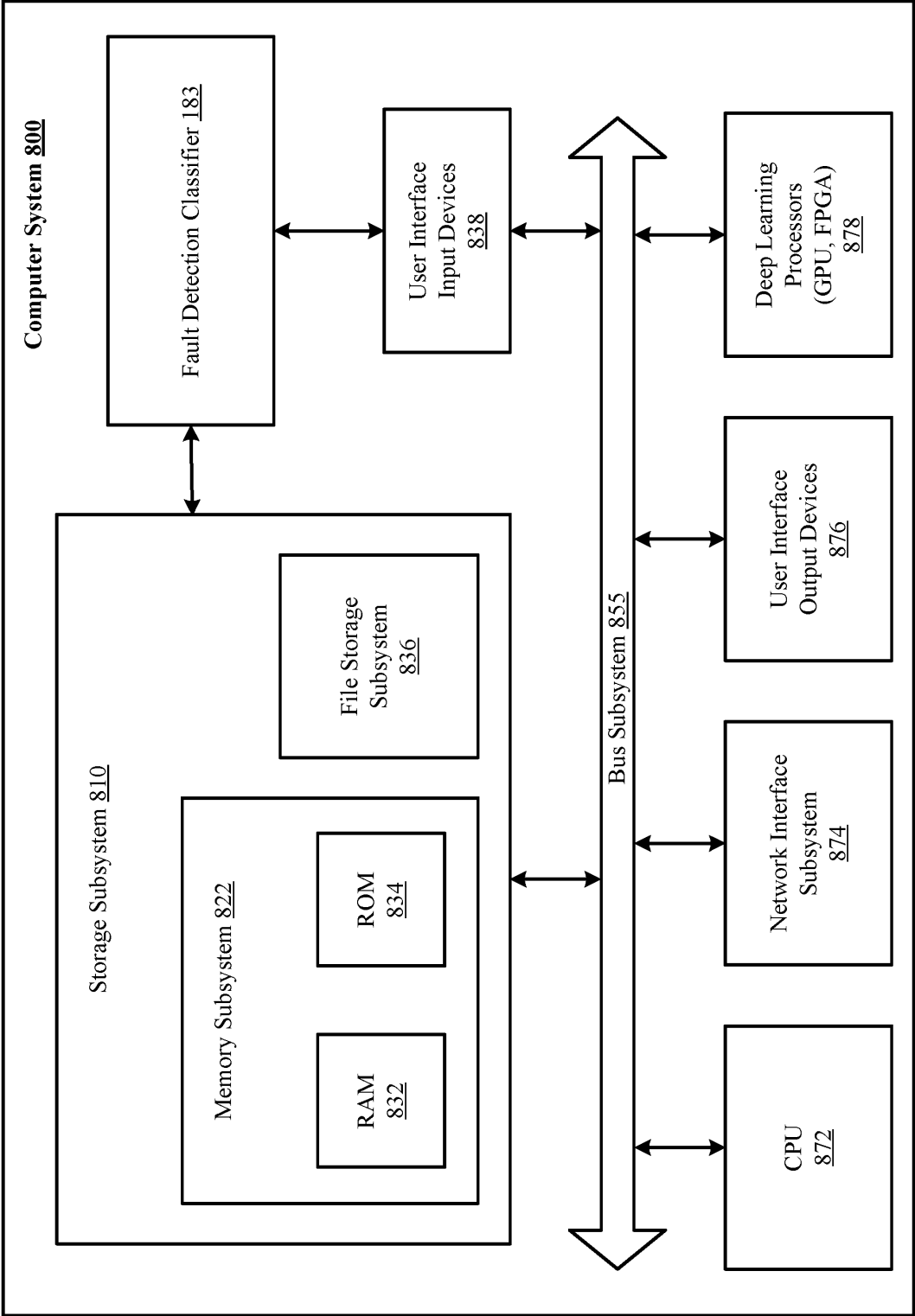


FIG. 8