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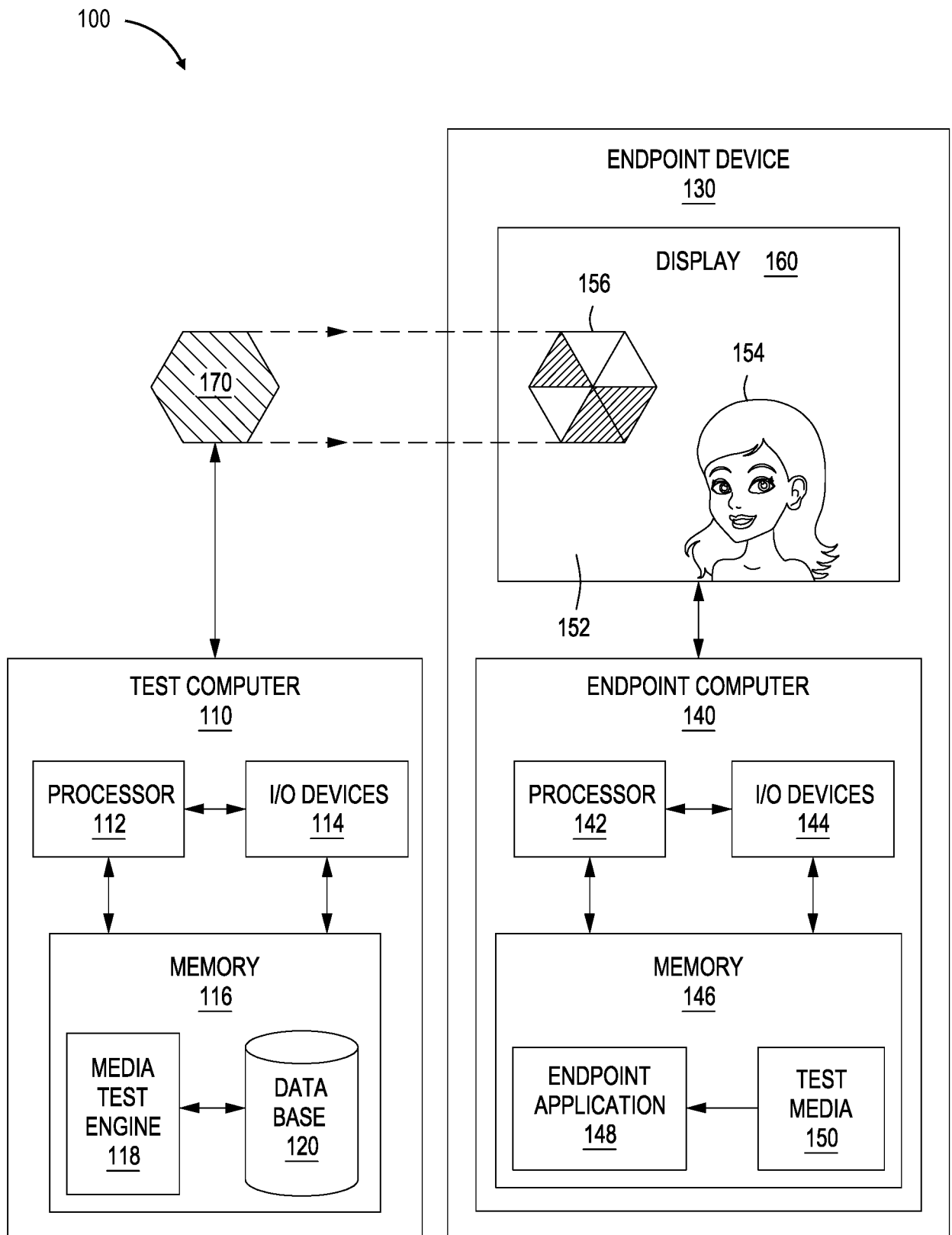


FIG. 1

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FIG. 2A

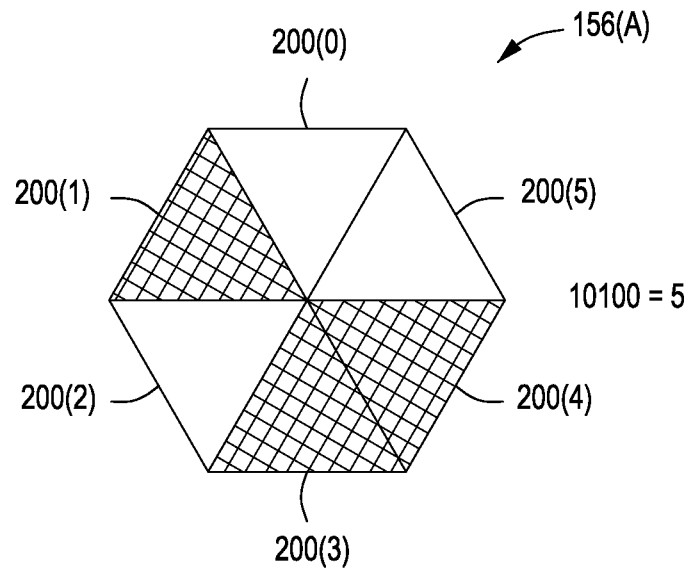


FIG. 2B

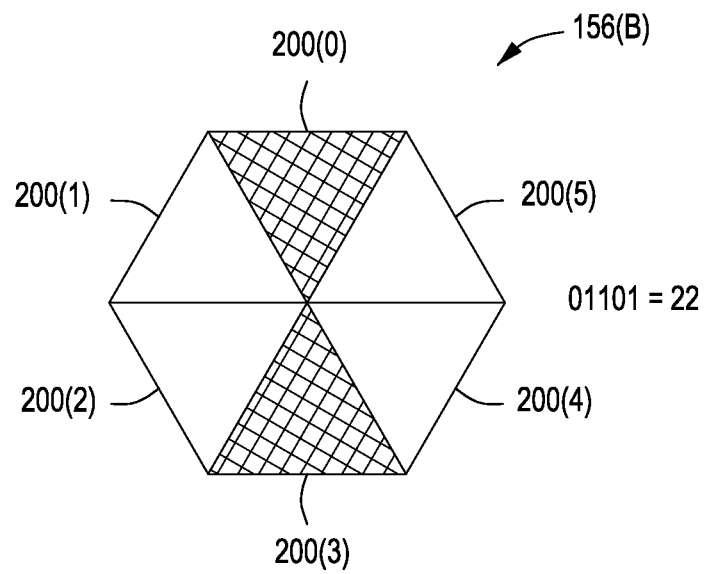
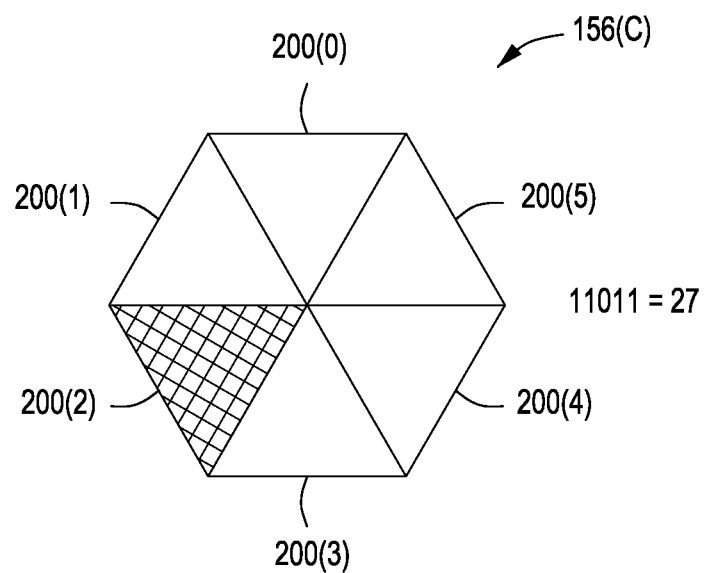


FIG. 2C



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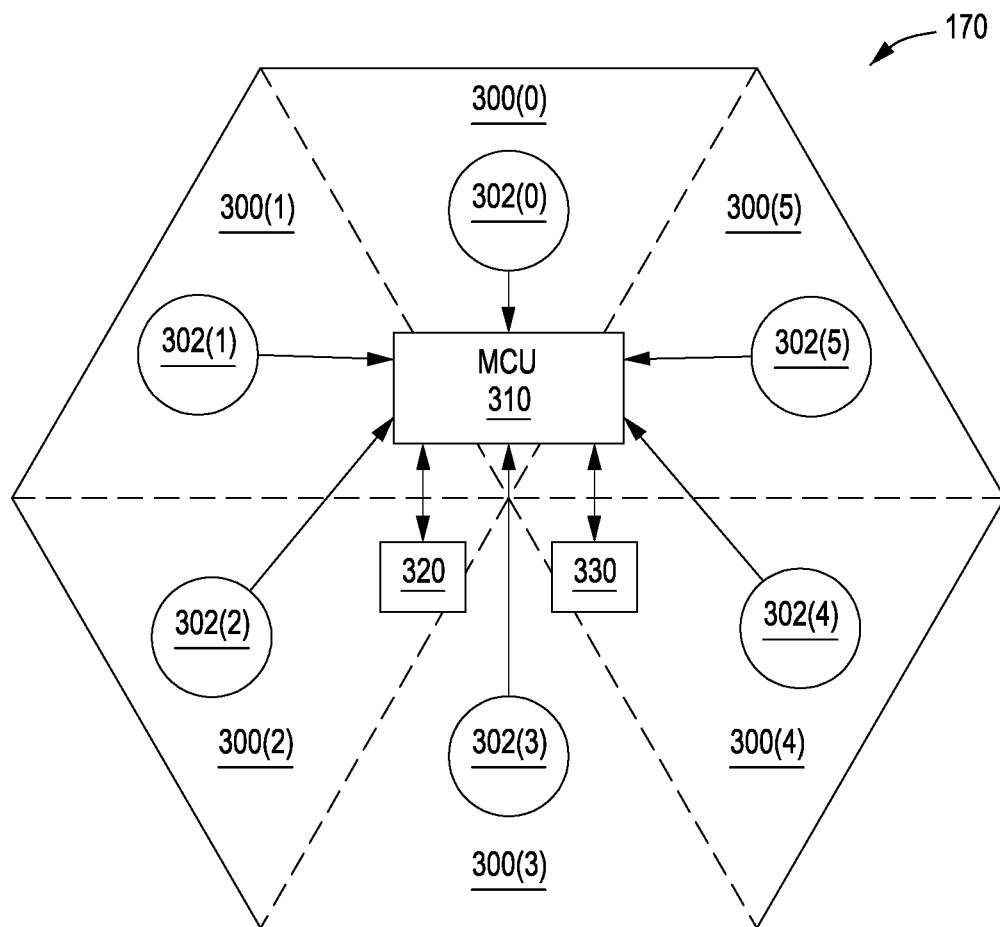


FIG. 3A

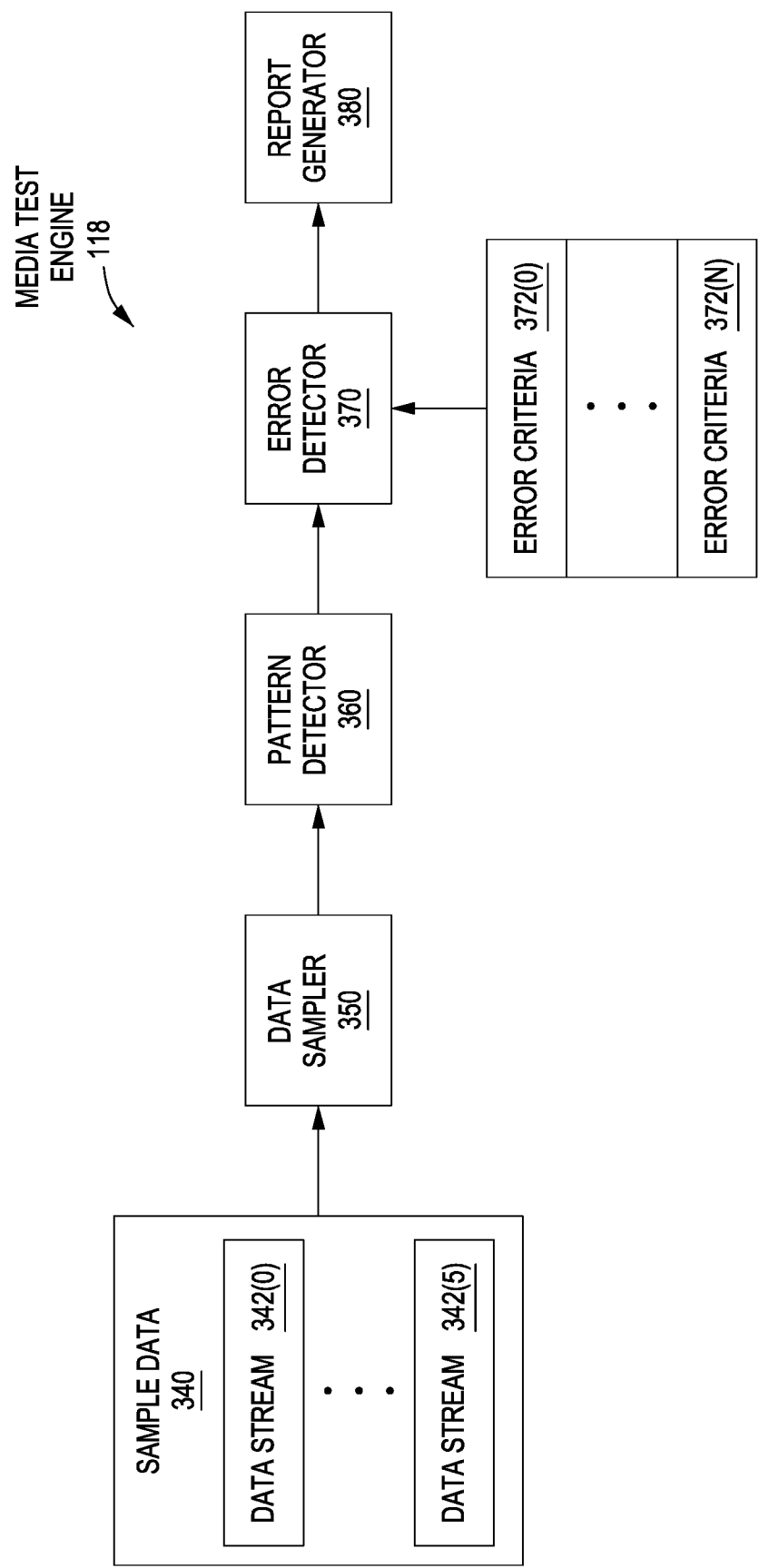


FIG. 3B

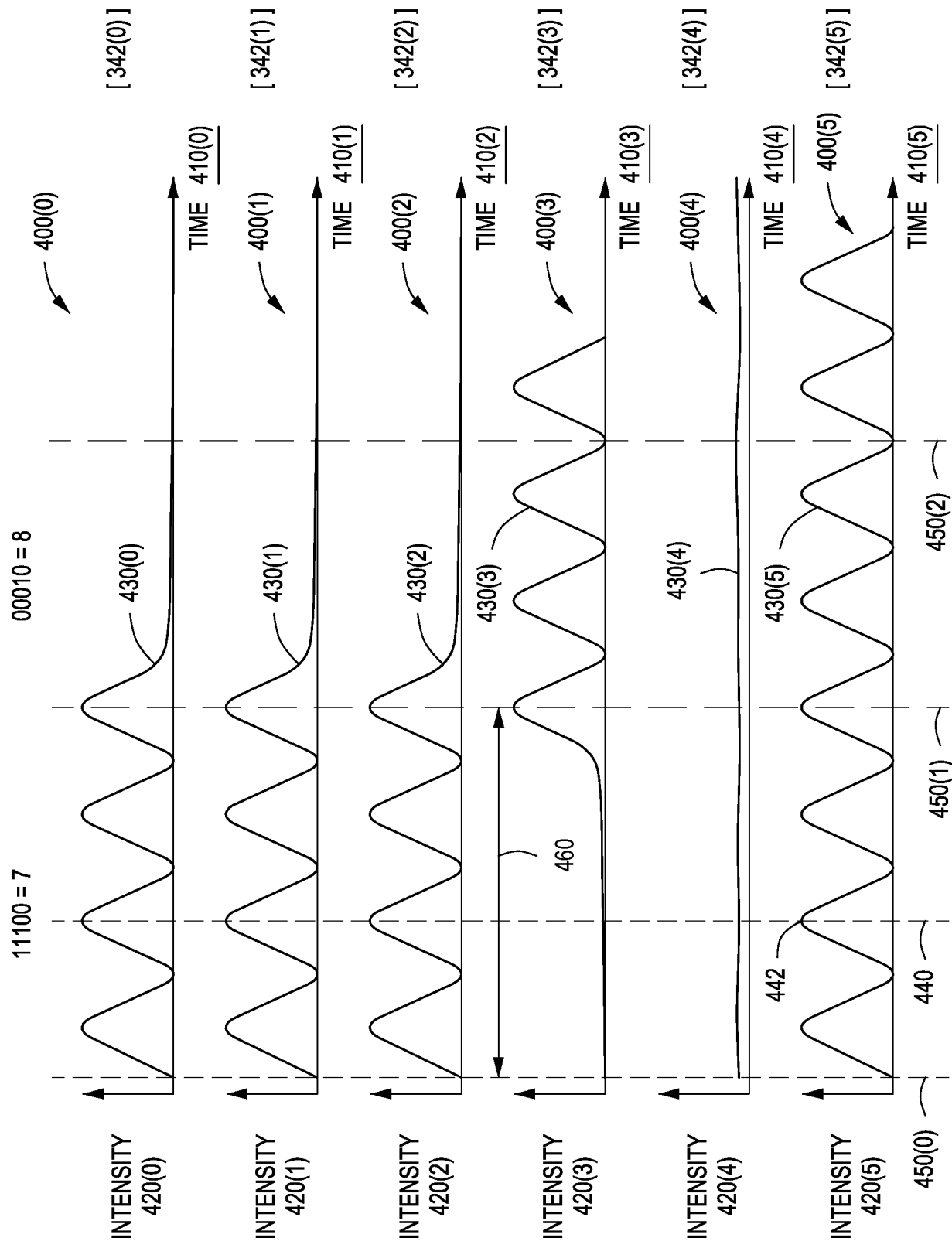


FIG. 4

NOMINAL PROGRESSION OF FRAMES

- FPS = FRAME PER SECOND
- 1/FPS = FRAME PERIOD (F_{int})

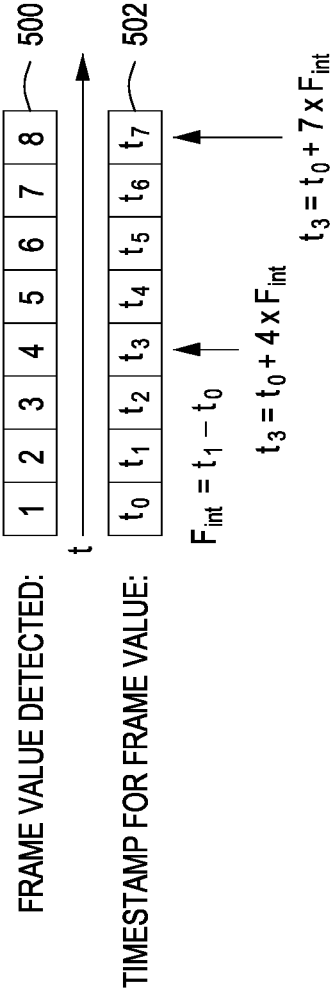


FIG. 5A

FRAME DROP DETECTION

- COUNTER SHOULD INCREMENT BY 1 AND TIMESTAMP INCREASE BY F_{int}
- COUNTER DOES NOT INCREMENT BY 1

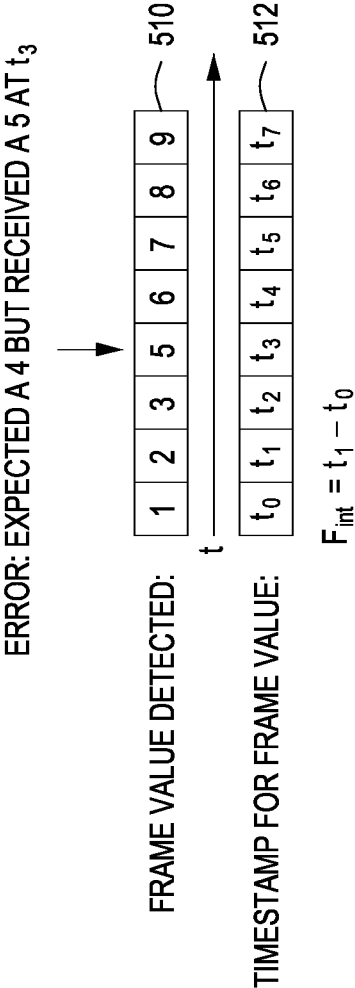


FIG. 5B

FRAME FREEZE DETECTION

- FREEZE THRESHOLD DEFINES THE ERROR TRIGGER
(F_{int})
- A FREEZE FRAME HAS A DURATION GREATER THAN
 $F_{int} \times F_{th}$
- FRAME DURATION EXCEEDS THRESHOLD

ERROR: FRAME DURATION EXCEEDED
THRESHOLD

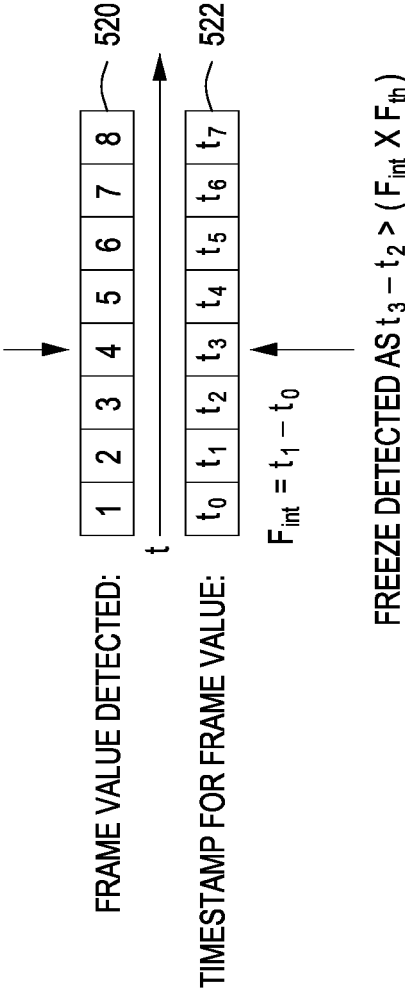


FIG. 5C

JUDDER / STUTTER DETECTION

- WITH NO STUTTER, TIMESTAMP SHOULD INCREASE BY F_{int}
- WHEN STUTTER OR JUDDER IS PRESENT, FRAME INTERVAL IS NOT CONSTANT FOR MULTIPLE CONSECUTIVE FRAMES
- FRAMES HAVE INCONSISTENT INTERVALS

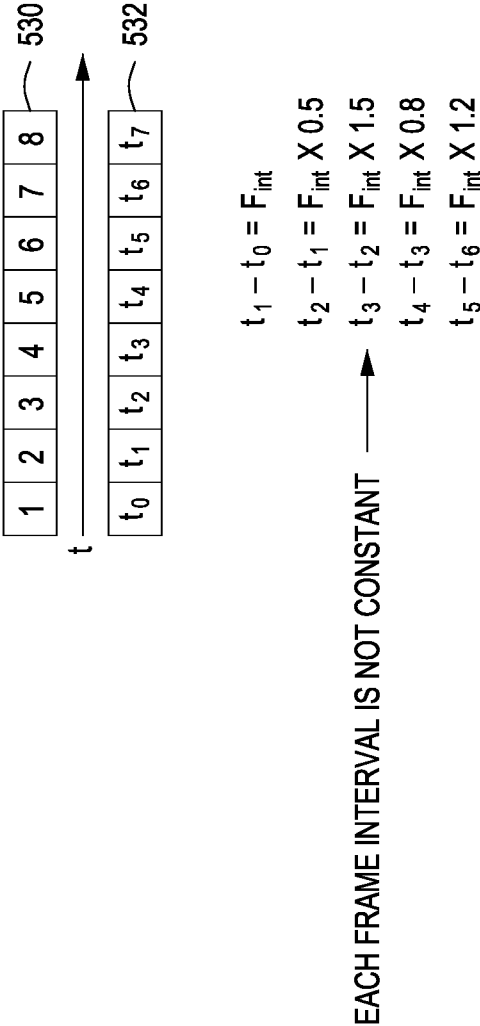


FIG. 5D

COUNTER ROLL OVER

- COUNTER SHOULD RESET TO ZERO AT PREDICTED TIMESTAMP BASED ON NUMBER OF COUNTER BITS
- 2-BIT COUNTER SHOULD RESET AFTER FRAME 3
- COUNTER DOES NOT RESET TO ZERO AT t_3

ERROR: EXPECTED COUNTER TO RESET TO ZERO, FRAME DROP DETECTED

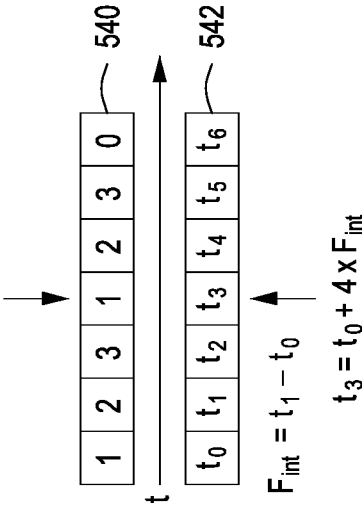


FIG. 5E

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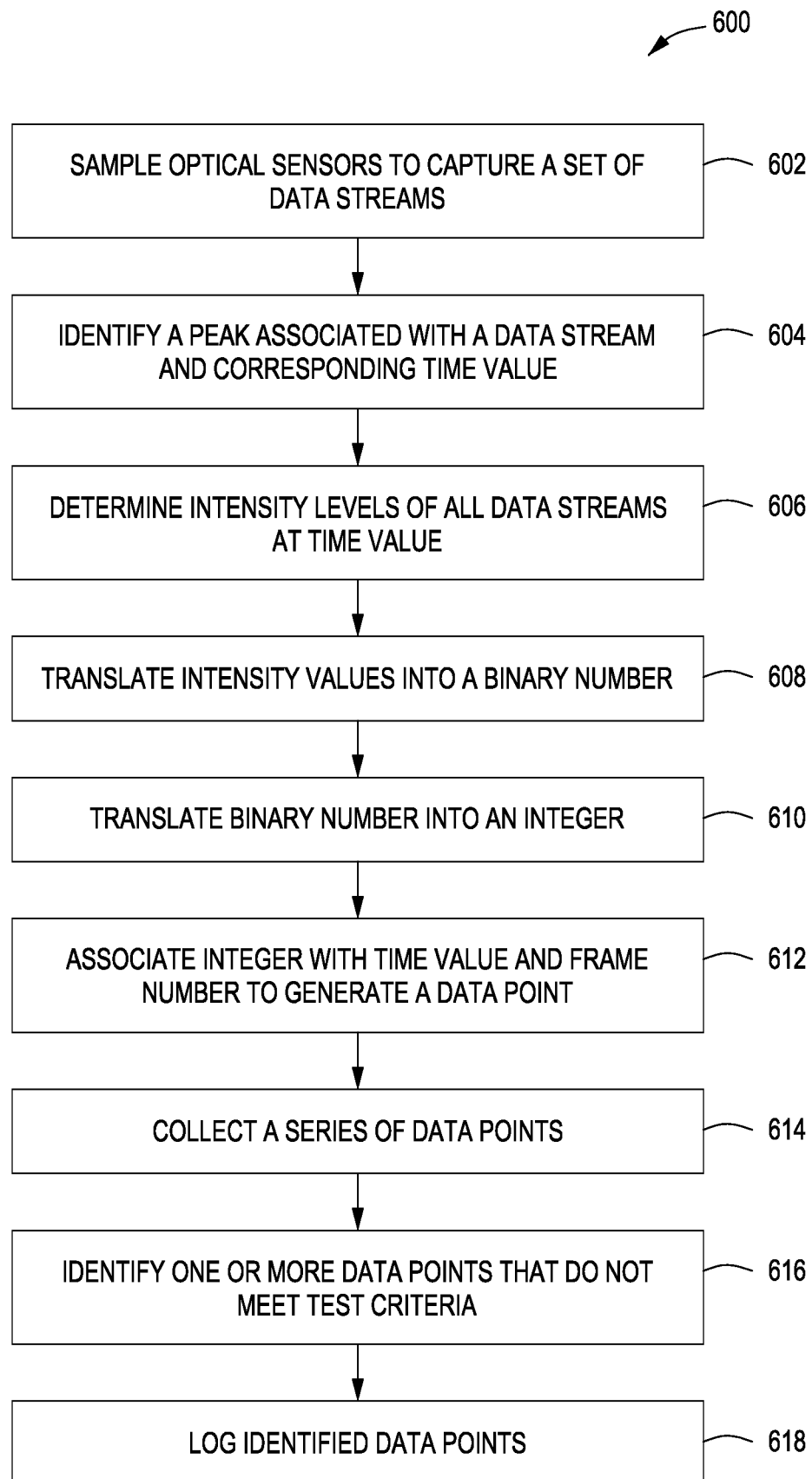


FIG. 6