OSIsoft PI System Supporting Process Decisions

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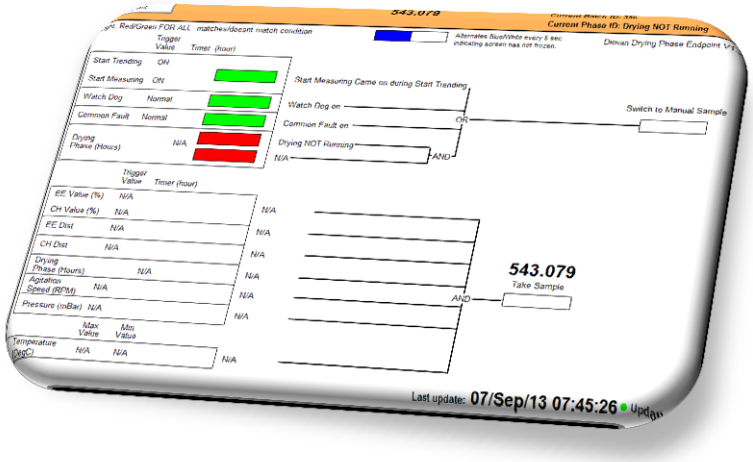
NOVARTIS

Novartis:OSIsoft PI System Supporting Process decisions

Leveraging the capability of OSIsoft PI System to support process decision making in real-time where no process control is required



NOVARTIS

Business Challenge

- Complex processing of production data performed on control system required offline testing and online testing which is intrusive and time consuming

Solution

- Elevate all of the process data to the Historian and deliver the calculations using BI and testing and validate without interfering with Production

Results and Benefits

- NIR Batch report
- Faster turnaround of change
- Reduced cost of change
- No process control Execute logic outside PCS

- Healthcare
  - Pharmaceuticals
  - Sandoz
  - Vaccines & Diagnostics
  - OTC
  - Animal Health
  - Alcon
  - 140,000 Associates across 140 countries
  - Pharma/TechOps/ChemOps
    - API DS manufacturing

OSIsoft PI System Supporting Process decisions - *background*

- NIR First Installed in 2008.
- System provides PAT data about the residual solvent (ESTP/CHXA) in the product in the Dryer
- Prior to NIR End Point Tool, IPC samples had to be taken at the end of each Drying Phase, with a delay for testing time.
- NIR provides multiple parameters, with different acceptance criteria for each drying Phase as well as process parameters such as vacuum, temperature and time – a decision on end point requires careful examination of all of the criteria

OSIsoft PI System Supporting Process decisions - *traditional approach*

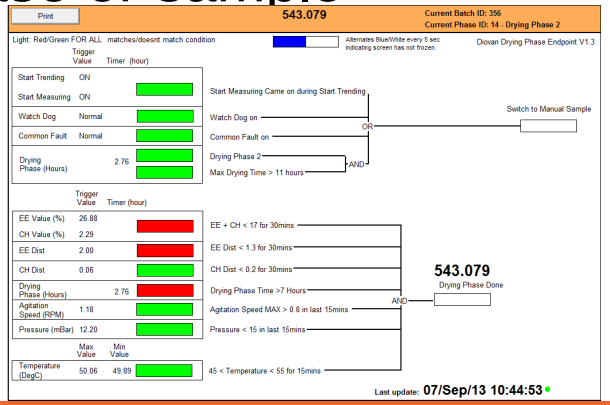
- DCS initially considered for giving users Traffic lights, to either advance the Drying Phase or Manually sample.
- System would be complex to implement on DCS
  - Difficult to simulate
  - Testing in the live plant
  - Changes/optimizations causes process interruptions for downloads
  - A lot of consumption of DCS tags/space
  - Poor graphic capability (legacy PCS)
- We had a resource constraint and there was always a greater priority

OSIsoft PI System Supporting Process decisions - *alternative approach*

- OSIsoft PI System was then explored as a solution as it contains all PCS data and NIR data
  - Premise being it was information only and not process control
  - PI System very well embedded in Ringaskiddy and trusted
- PI ActiveView was determined to be the best display solution, used on site since 2003 for web based displays and reports.
  - NIR Report could be created, validated, released and controlled via a web content server for the PI System (Novametrics)
- Integrated VBA and PI SDK have the flexibility and power to build a Traffic light display that can reliably show the current state of drying.

OSIsoft PI System Supporting Process decisions – *implementation approach*

- Watchdog Parameters indicate an error with the NIR or associated system or drying went over time limits, operator should switch to Manual sampling in this case.
- NIR and Dryer Process Values indicate via traffic light if a good condition is met. Once all conditions are met Operators are prompted to advance phase or sample depending on Drying Phase.
- It also displays the “Trigger Value”, the closest value in the time period to the limit.
- Located on a Control Room PC

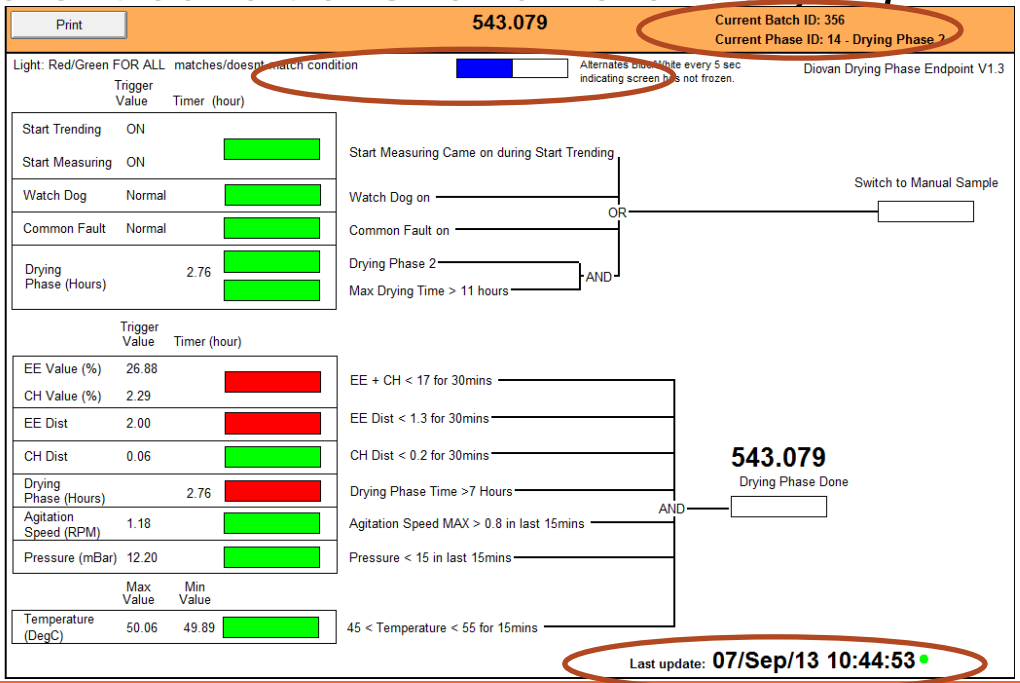


OSIsoft PI System Supporting Process decisions – *implementation approach*

- Report can show different conditions for different drying phases.

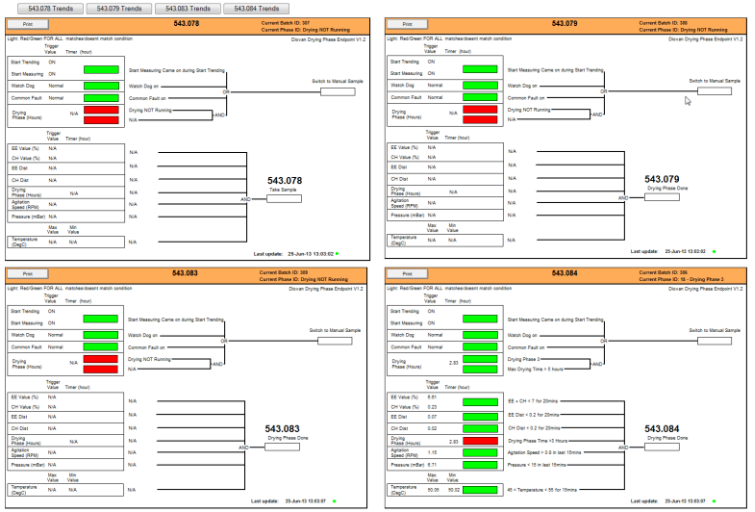
Current Batch/Phase/drying step

PC/Server Heartbeat

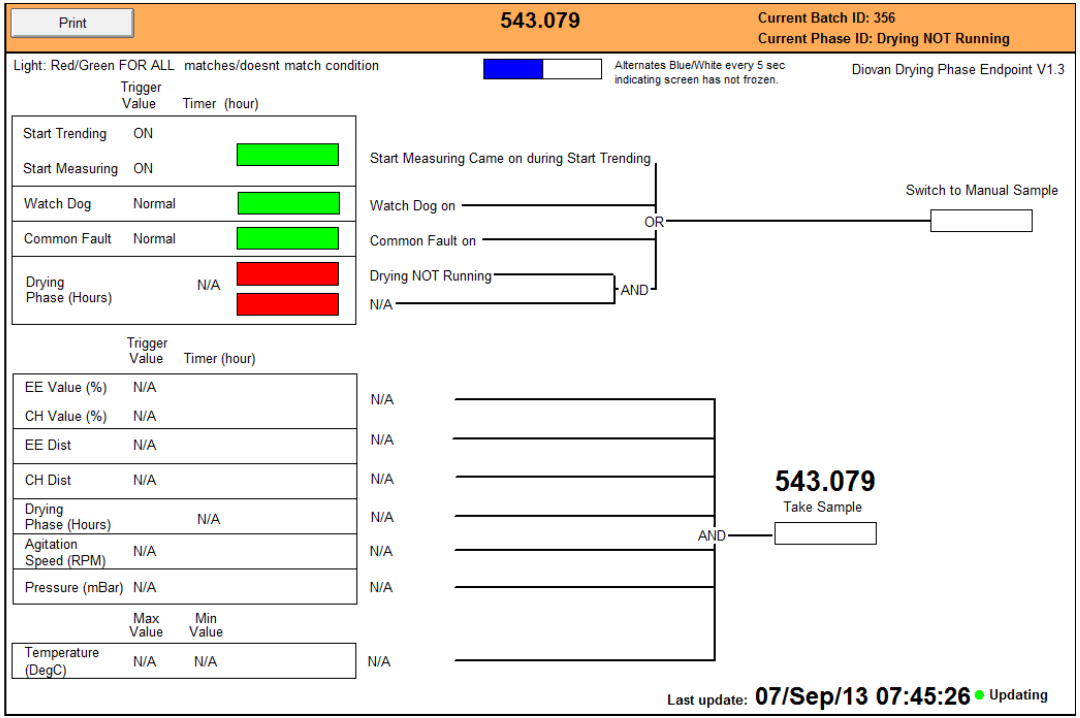


OSIsoft PI System Supporting Process decisions – *benefits*

- Reduction in the amount of resources spent on sampling (QC)
- Reduces delay time between phases and the overall drying time
  - Reduced deviations via avoiding over drying
- Allows users to quickly document the NIR Parameters met requirements with authenticated Print function.
- Changes can be made without downloads or alterations to PCS.
- Complex conditions can be handled.
- Report can be opened on any CONNECT PC.
- Lower cost
- Reduced Energy consumption



OSIsoft PI System Supporting Process decisions – *playback*



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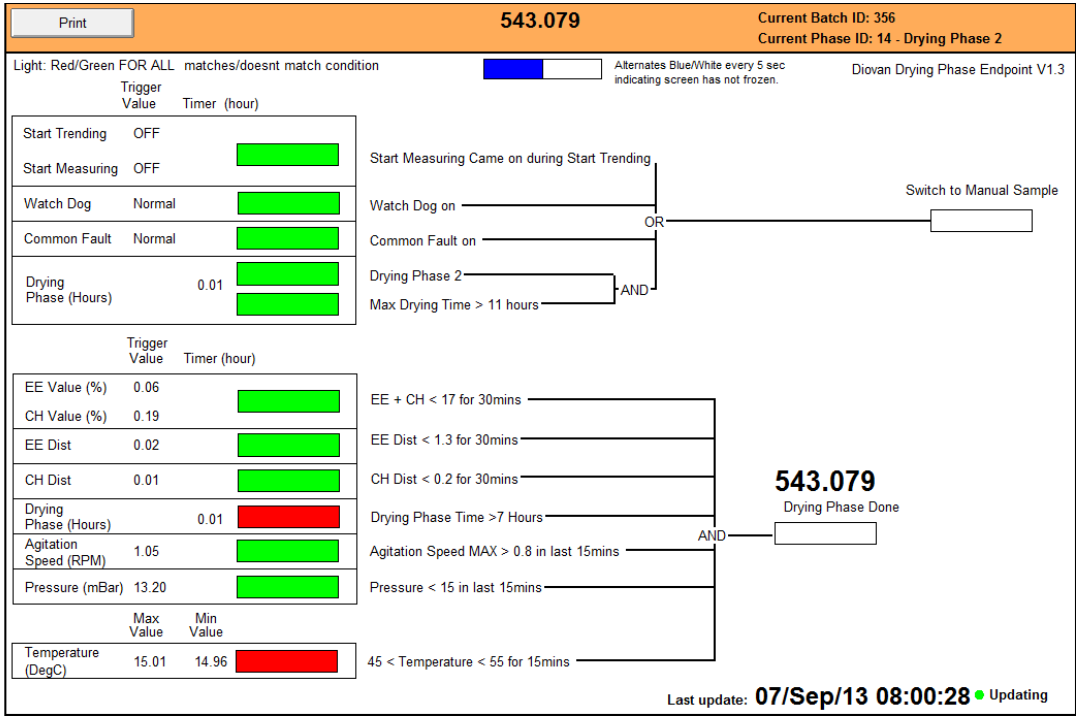

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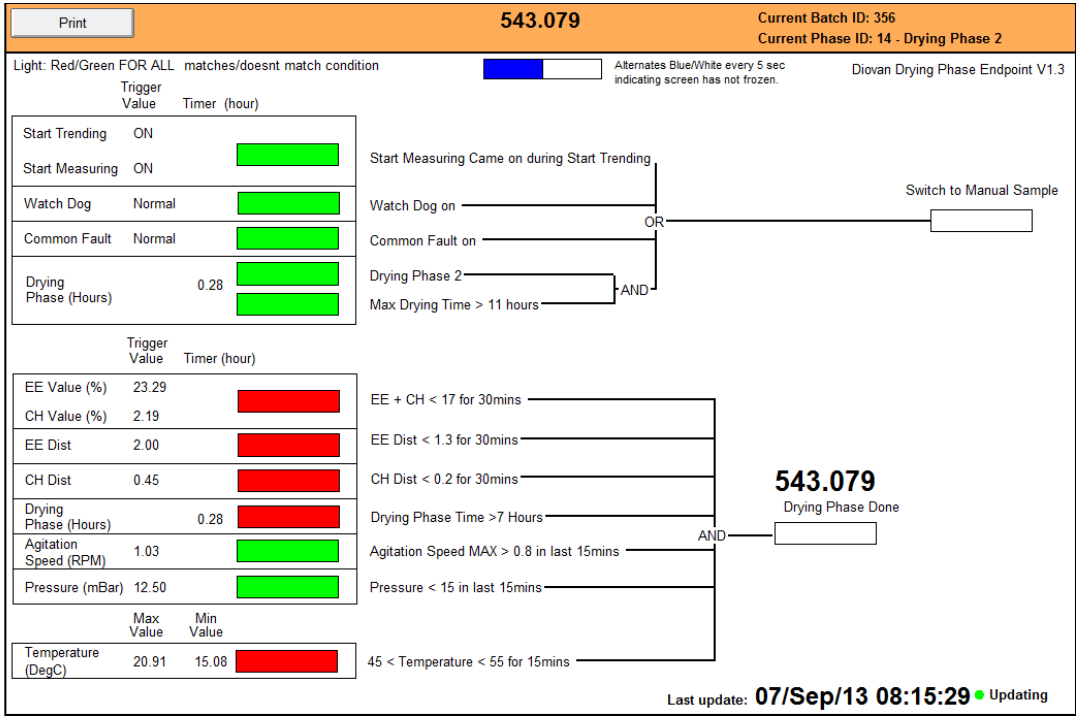

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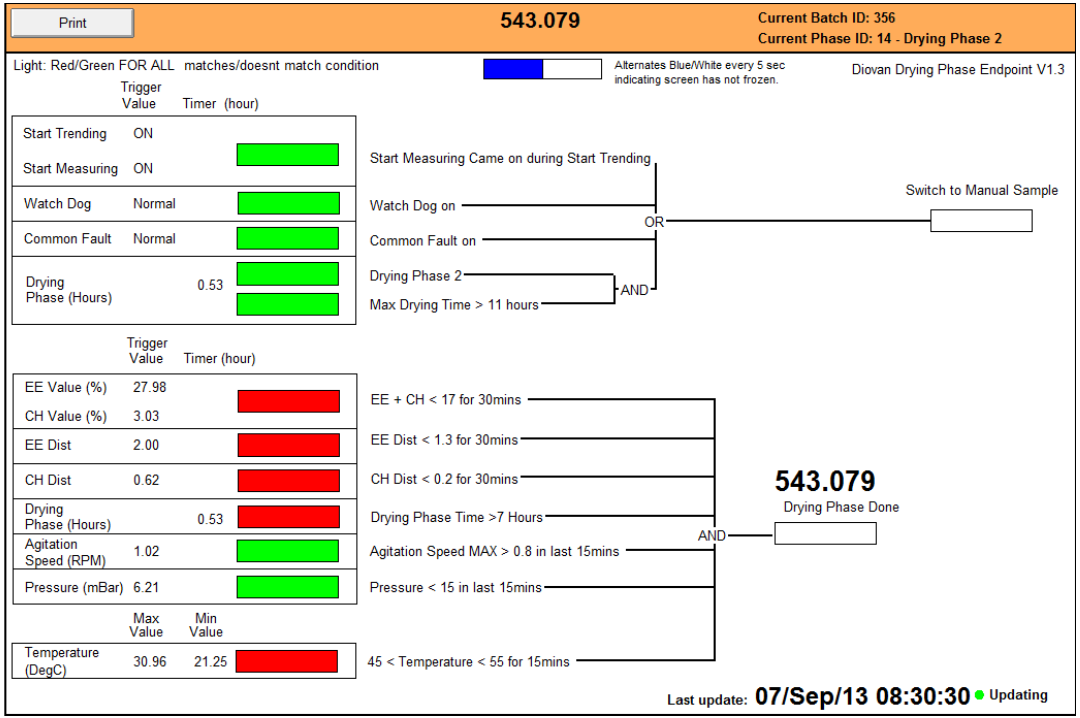

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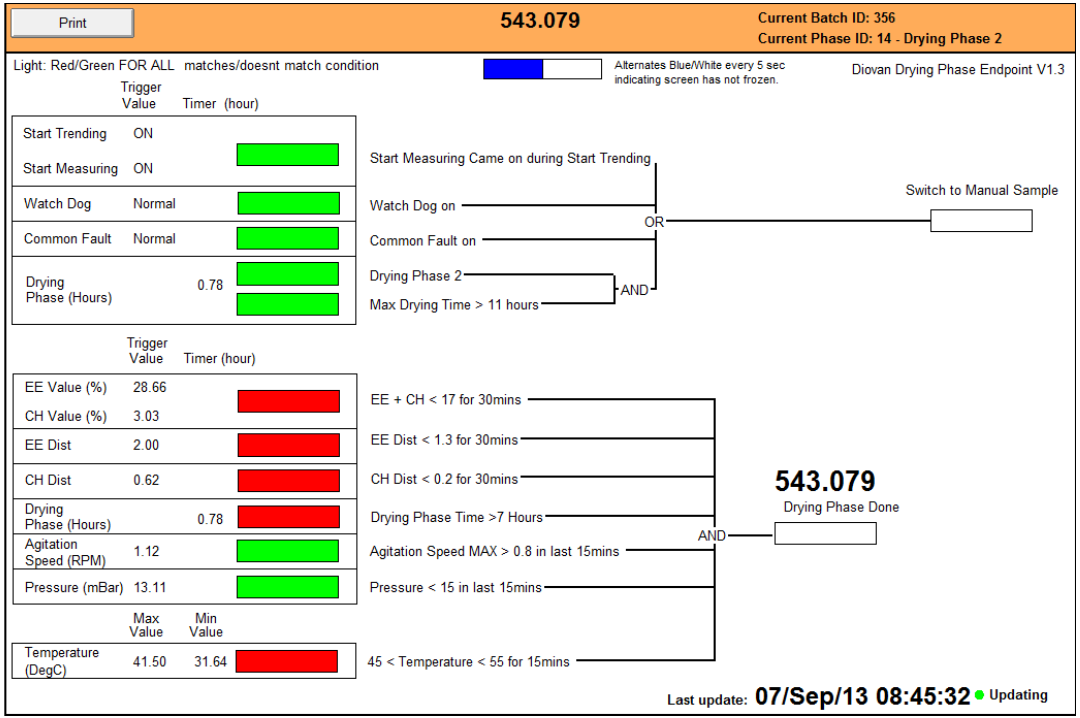

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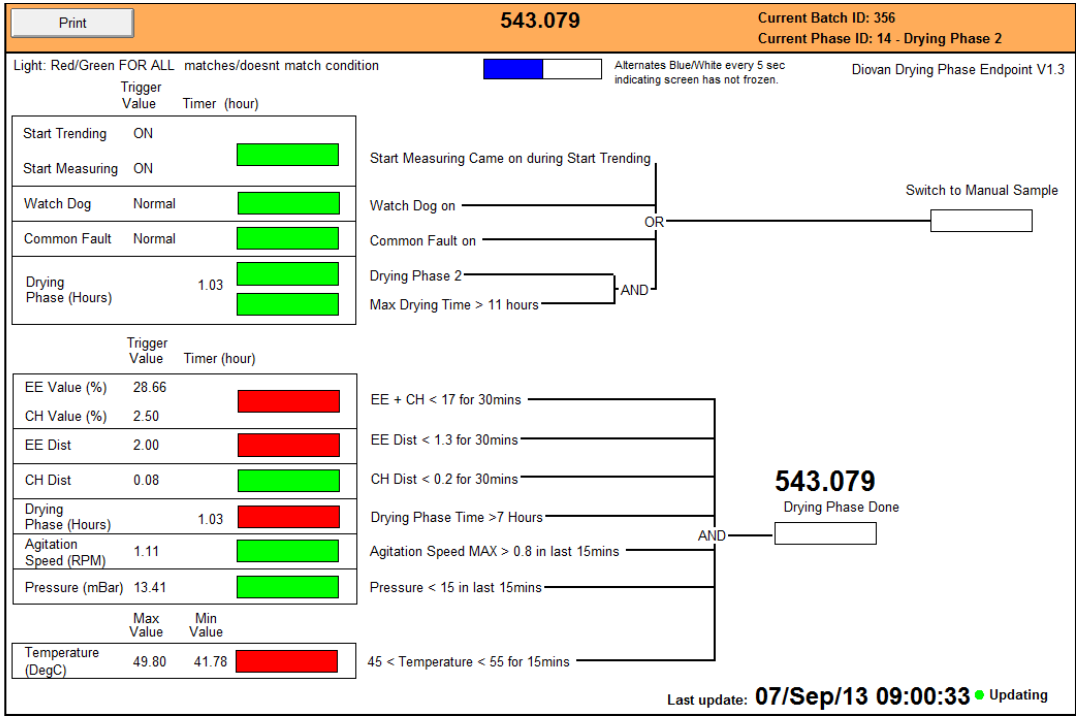

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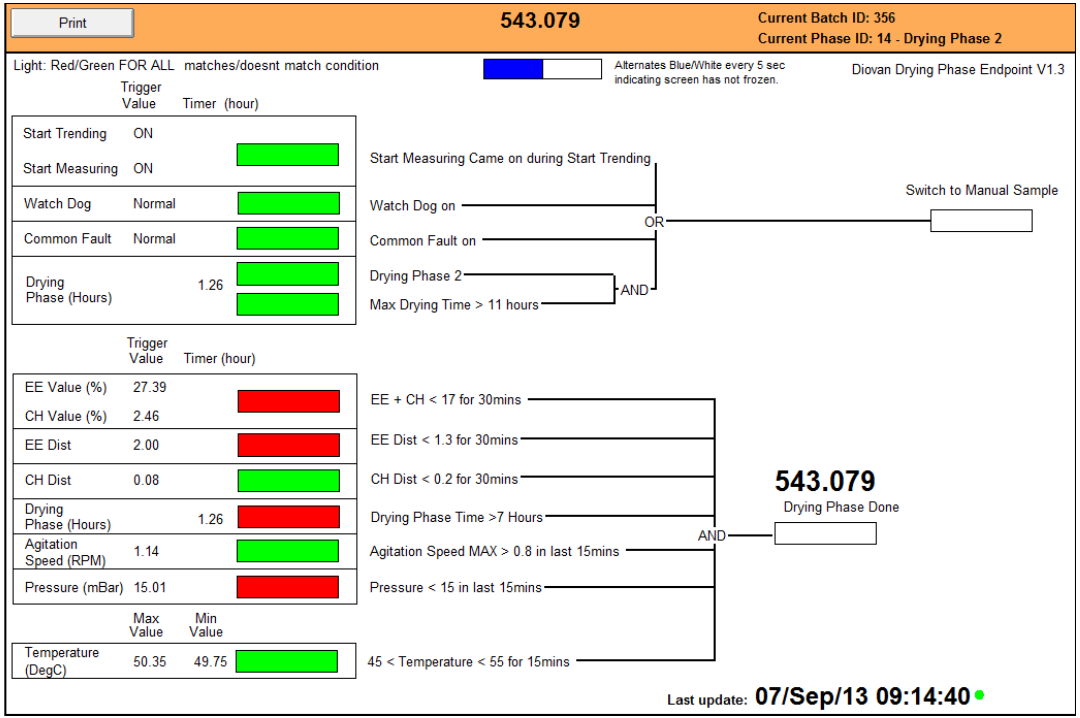

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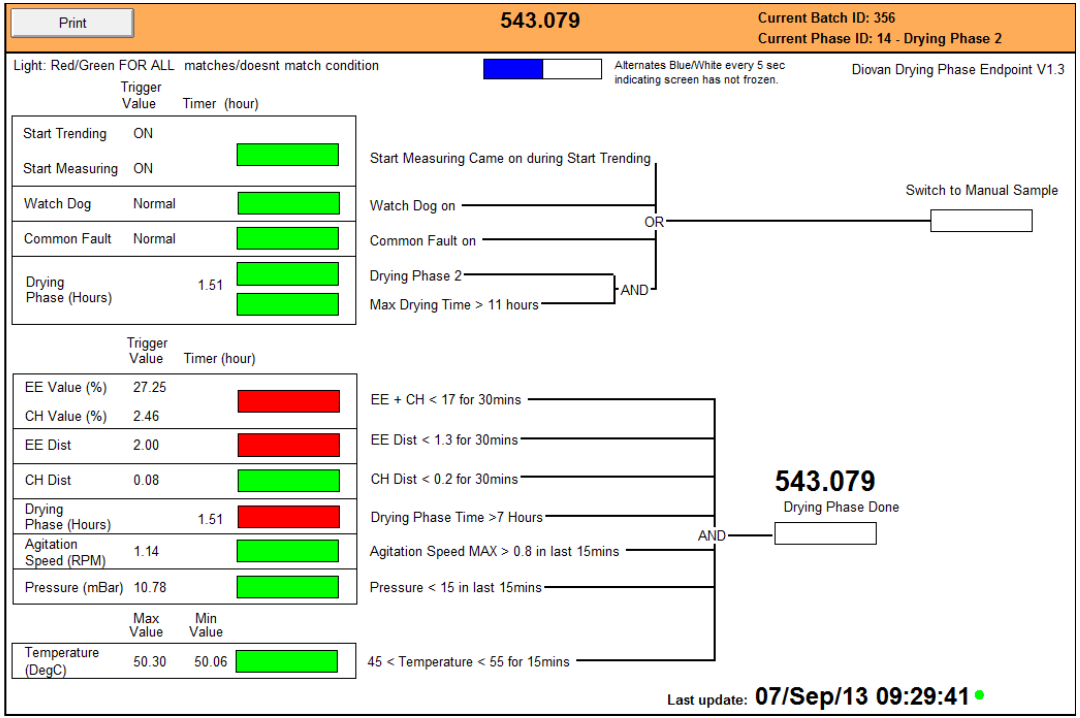

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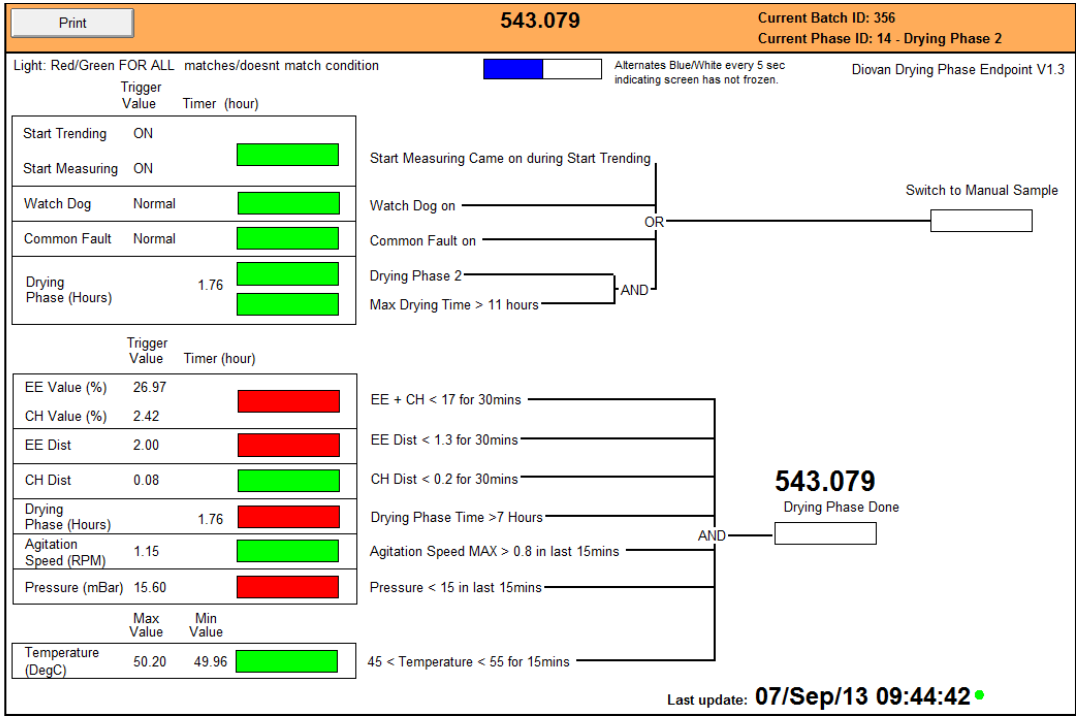

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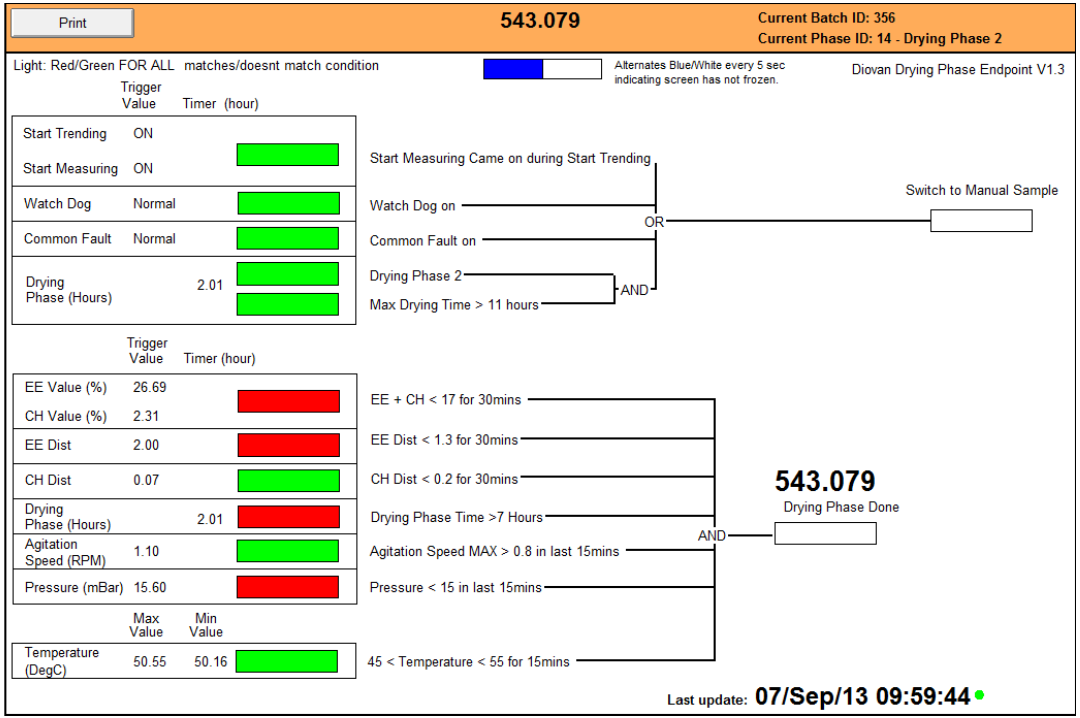

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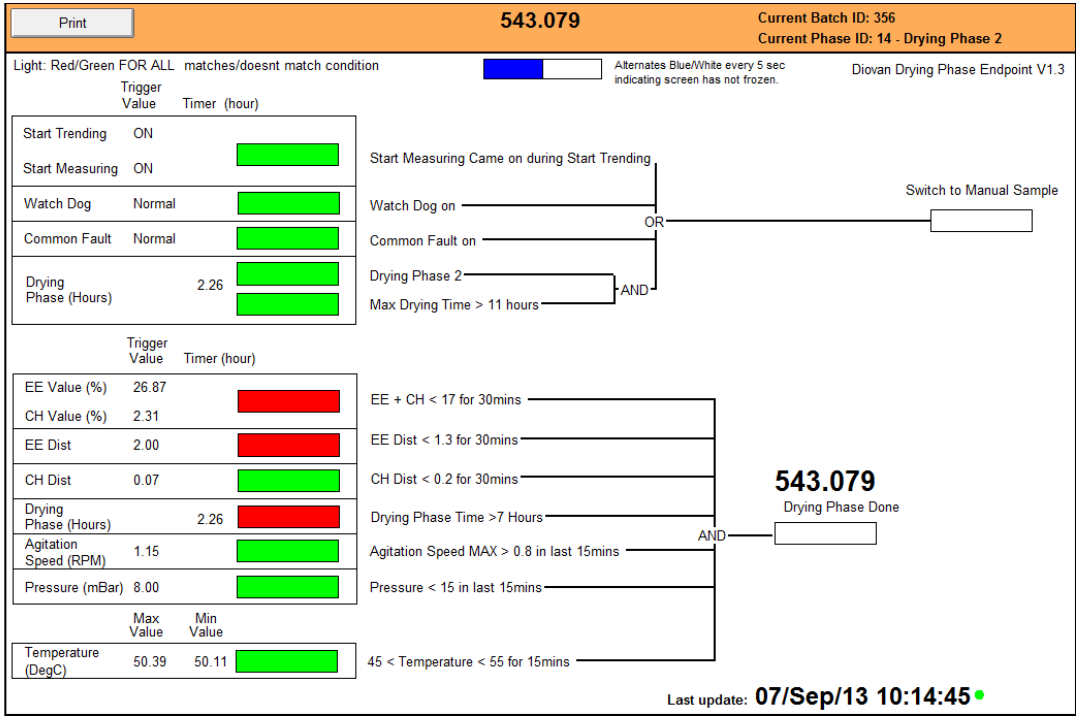

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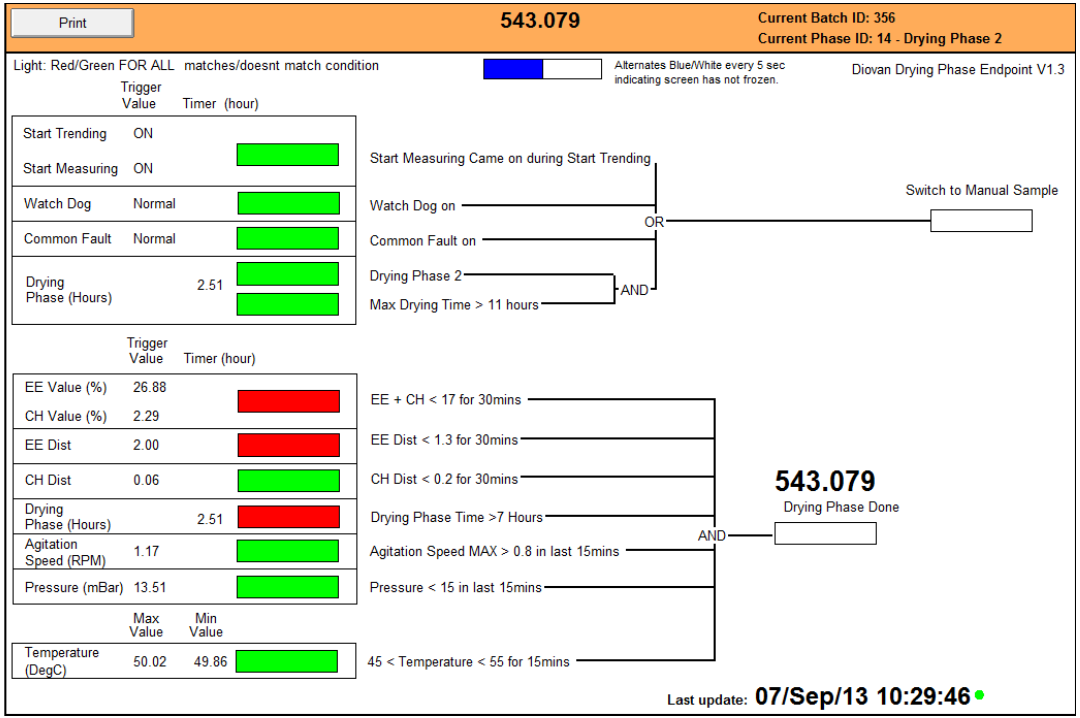

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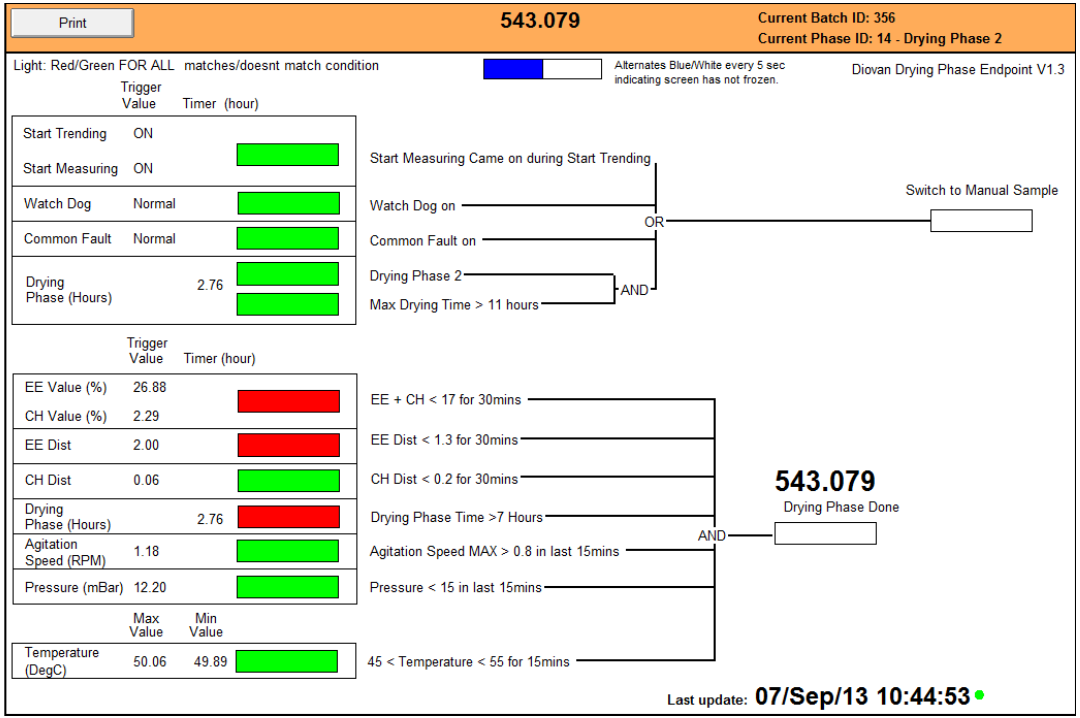

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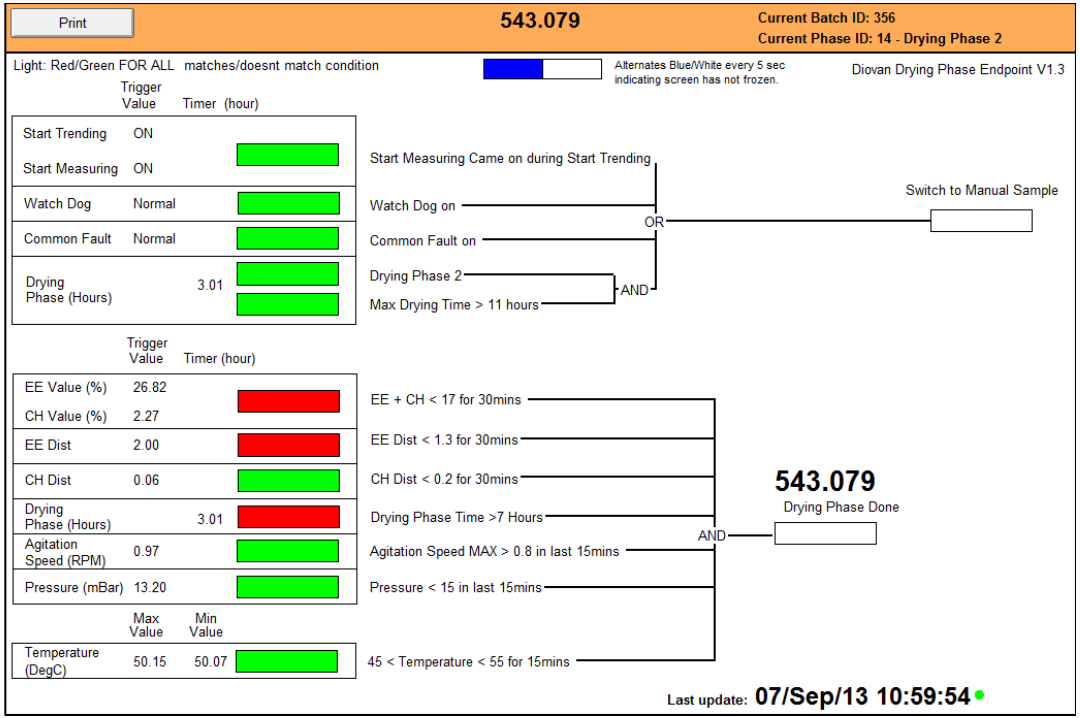

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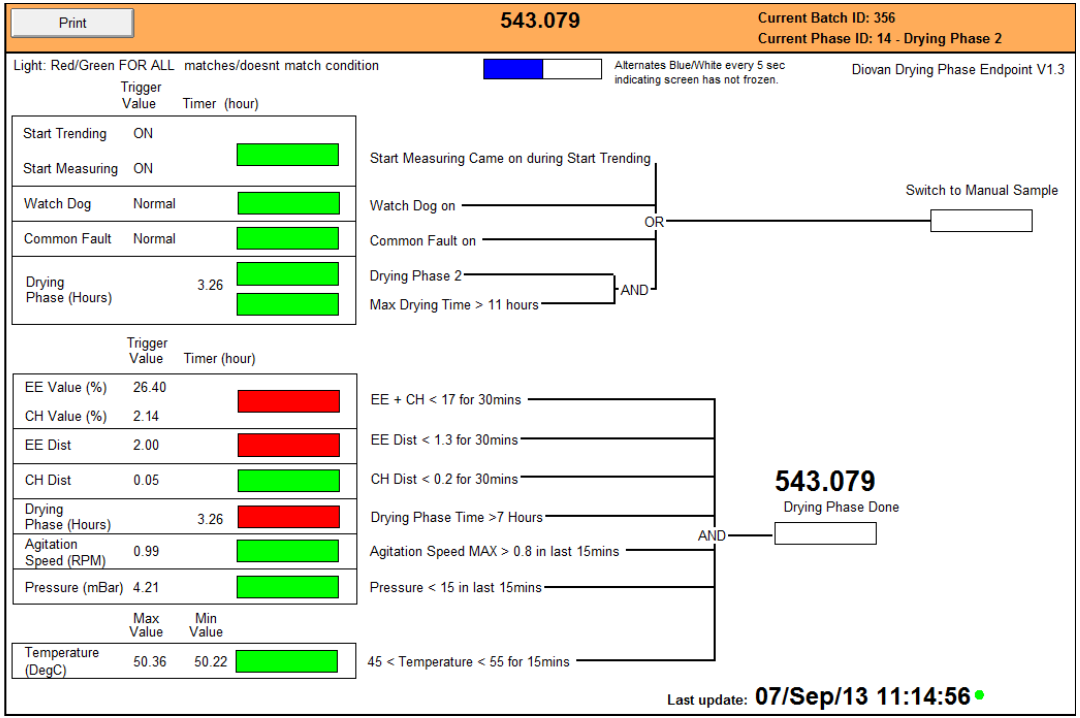

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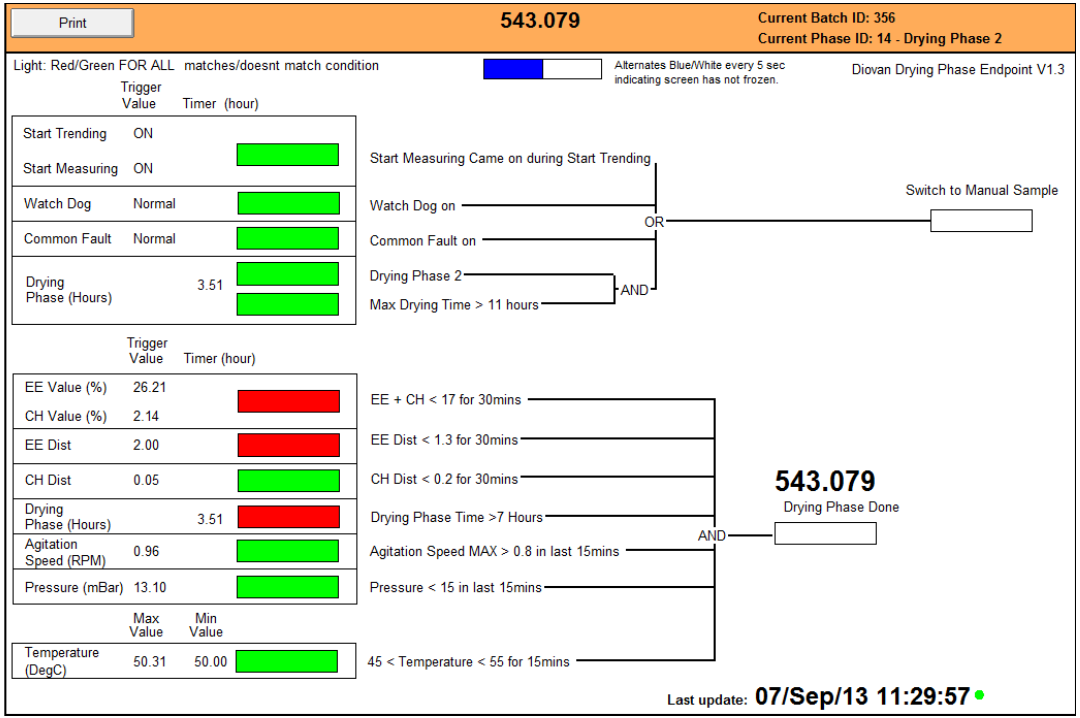

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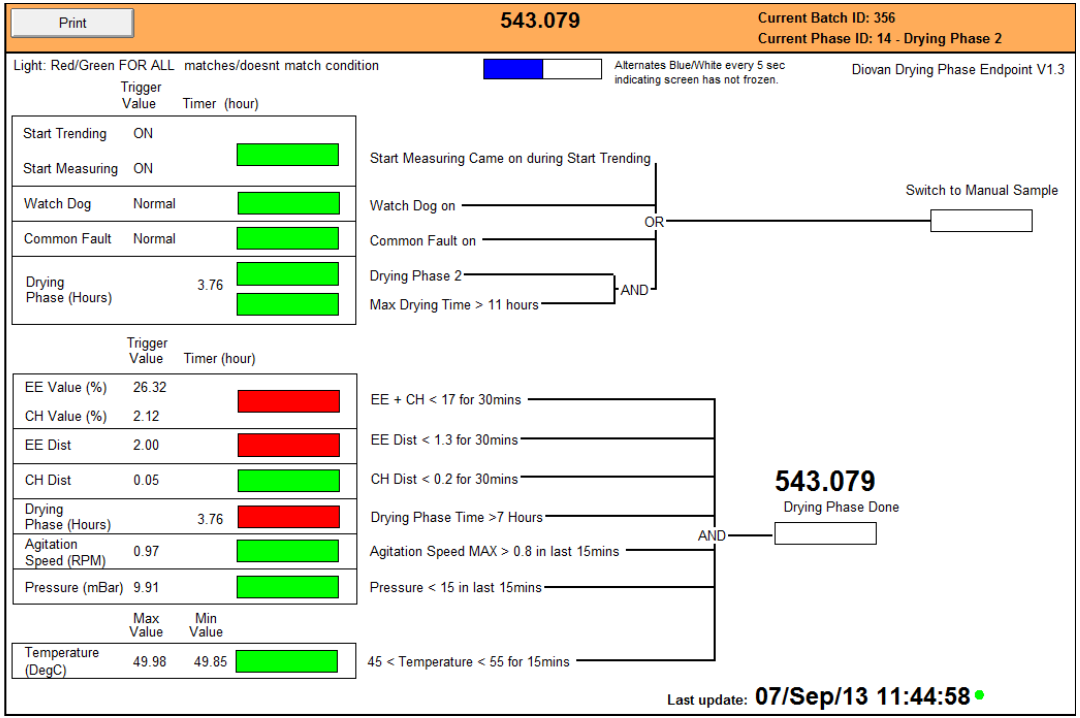

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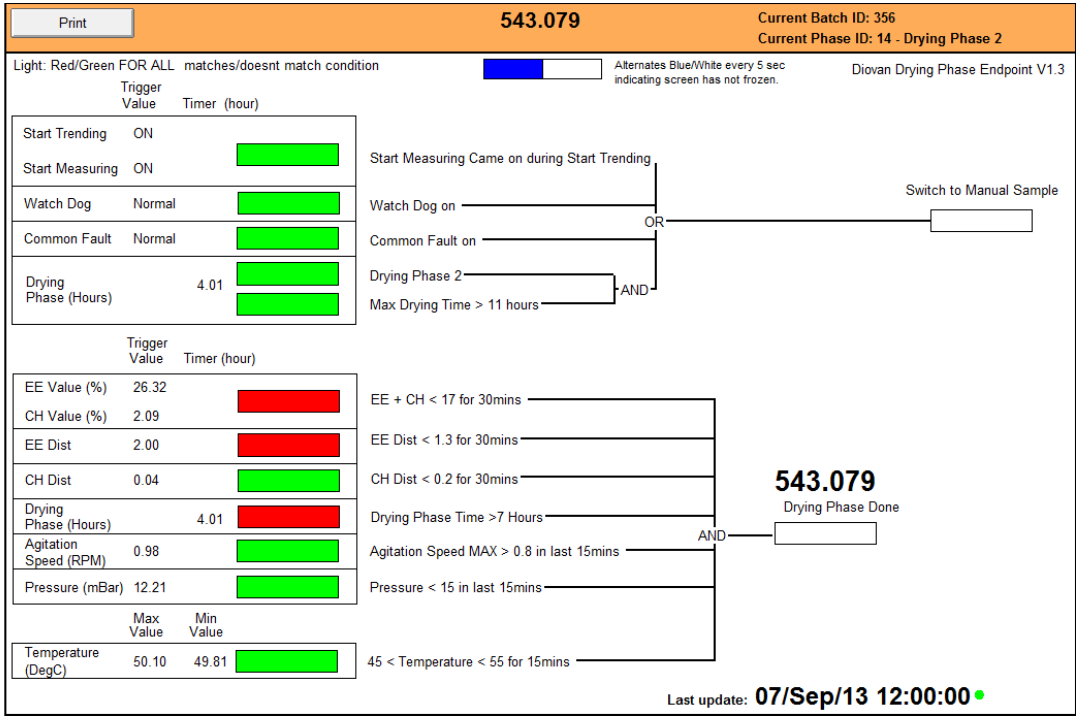

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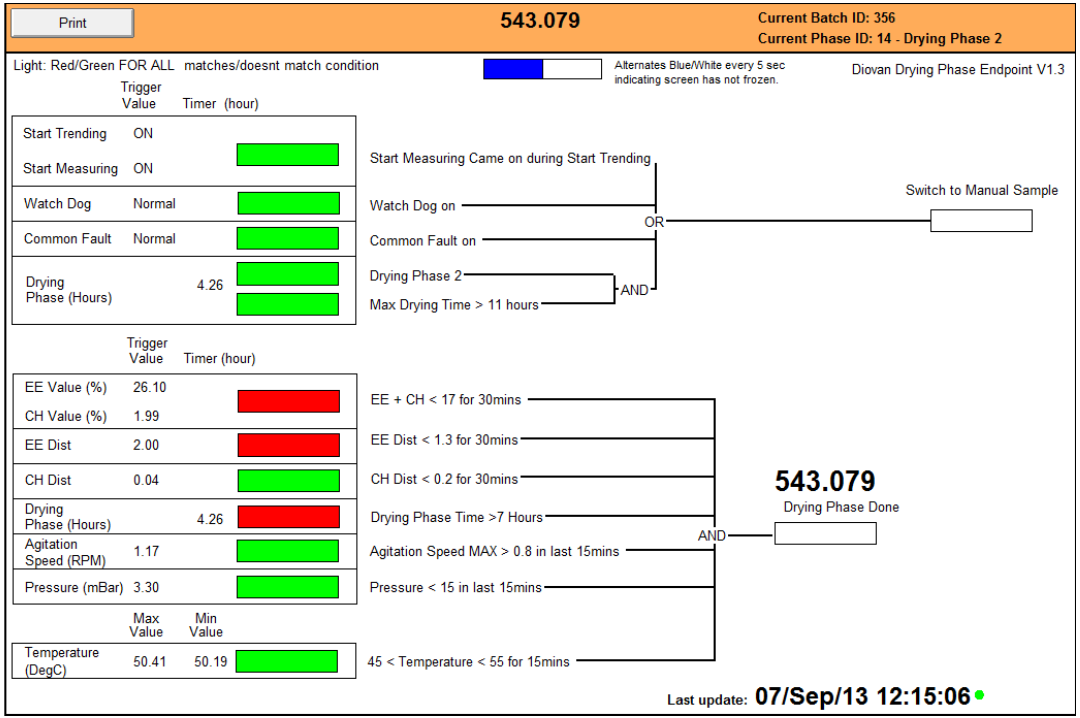

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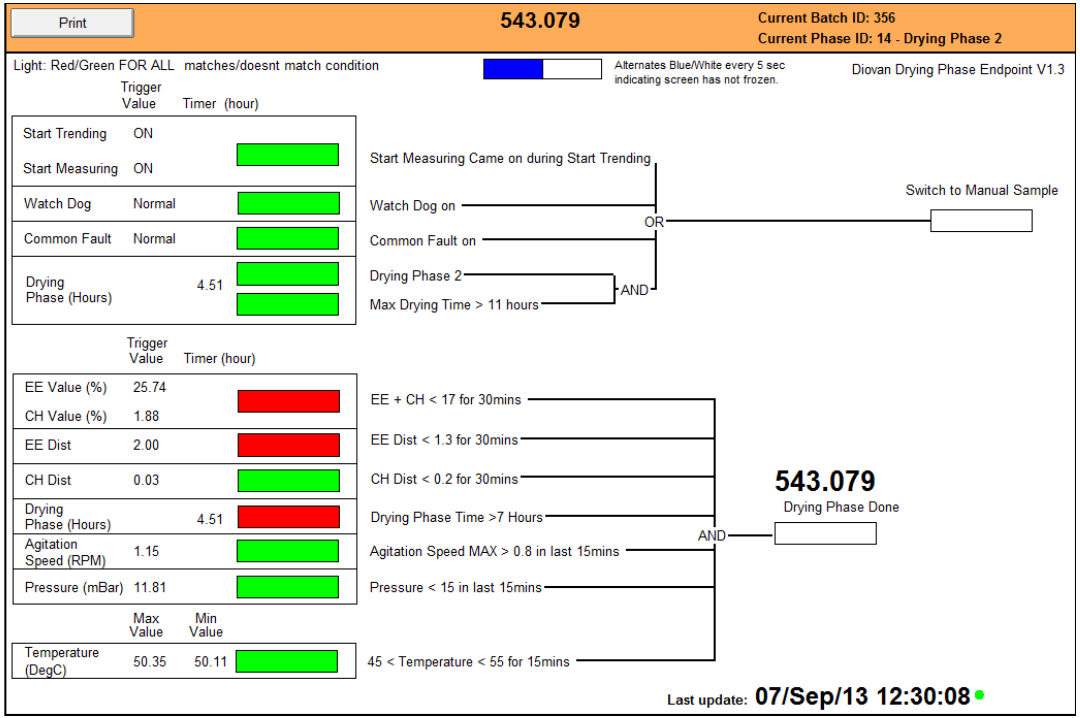

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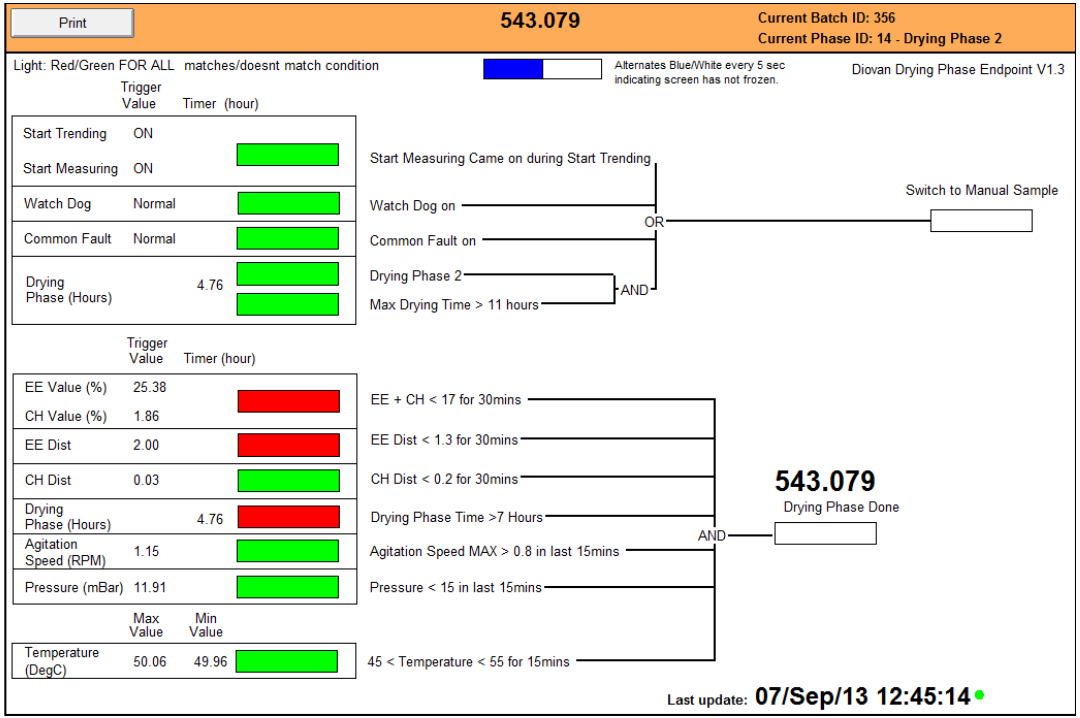

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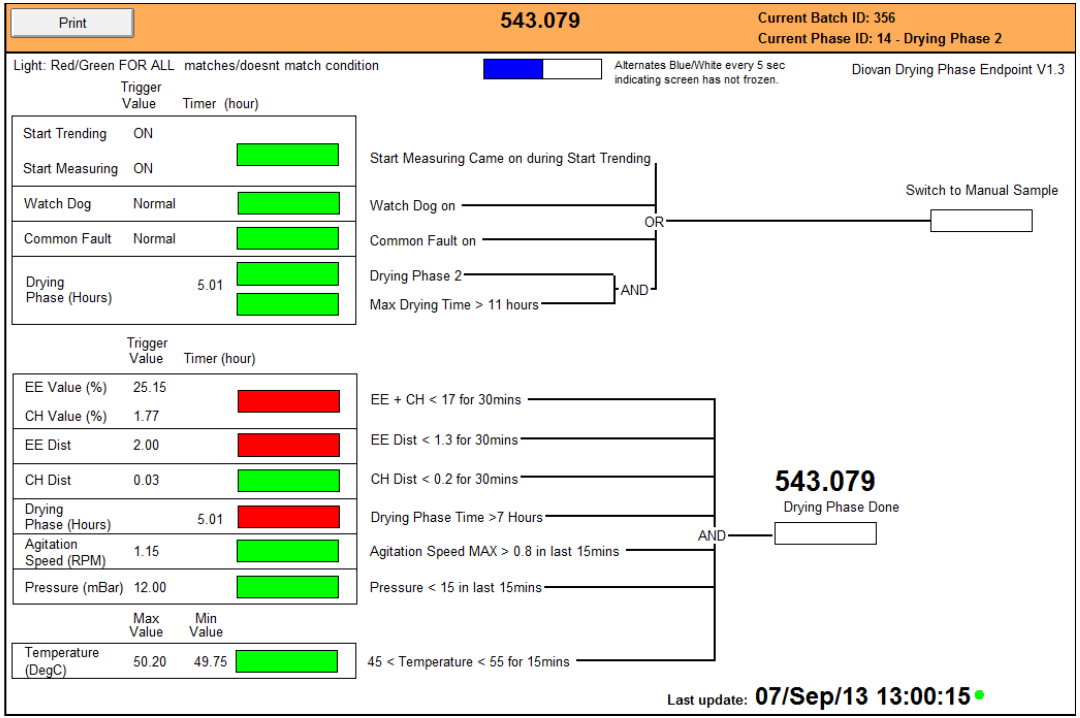

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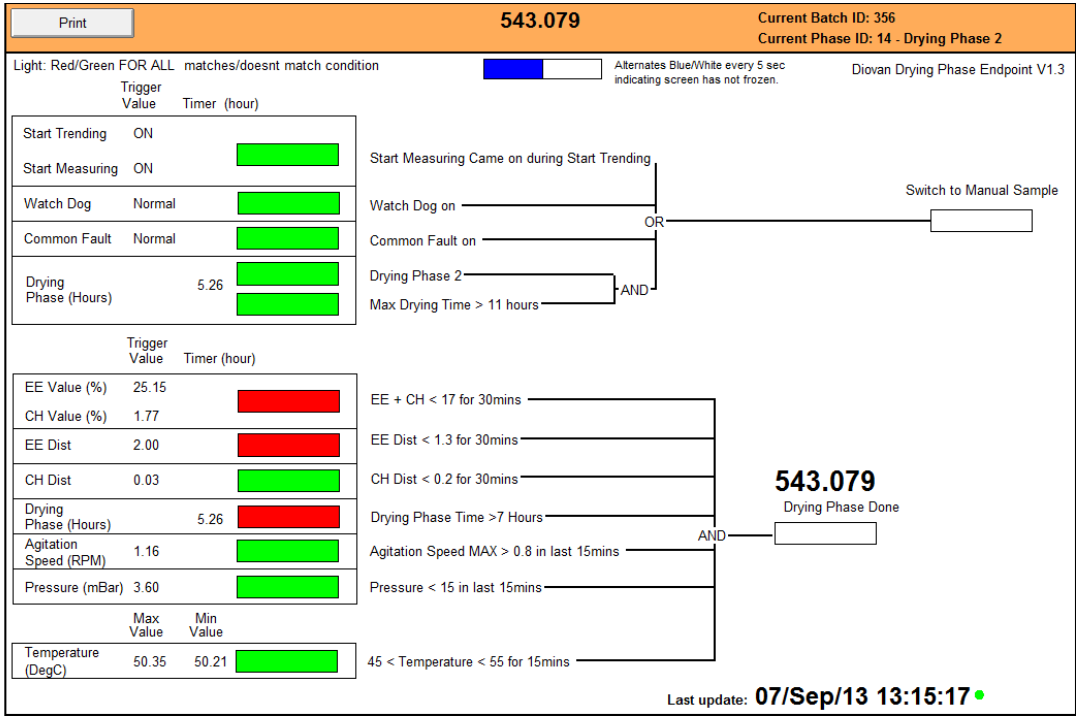

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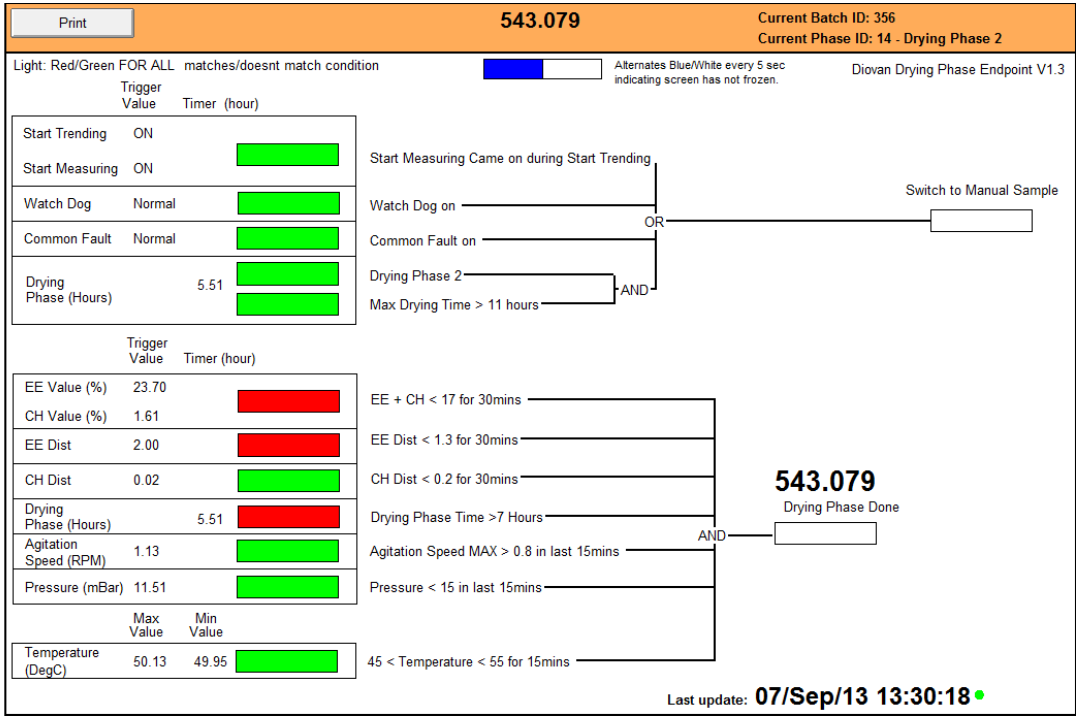

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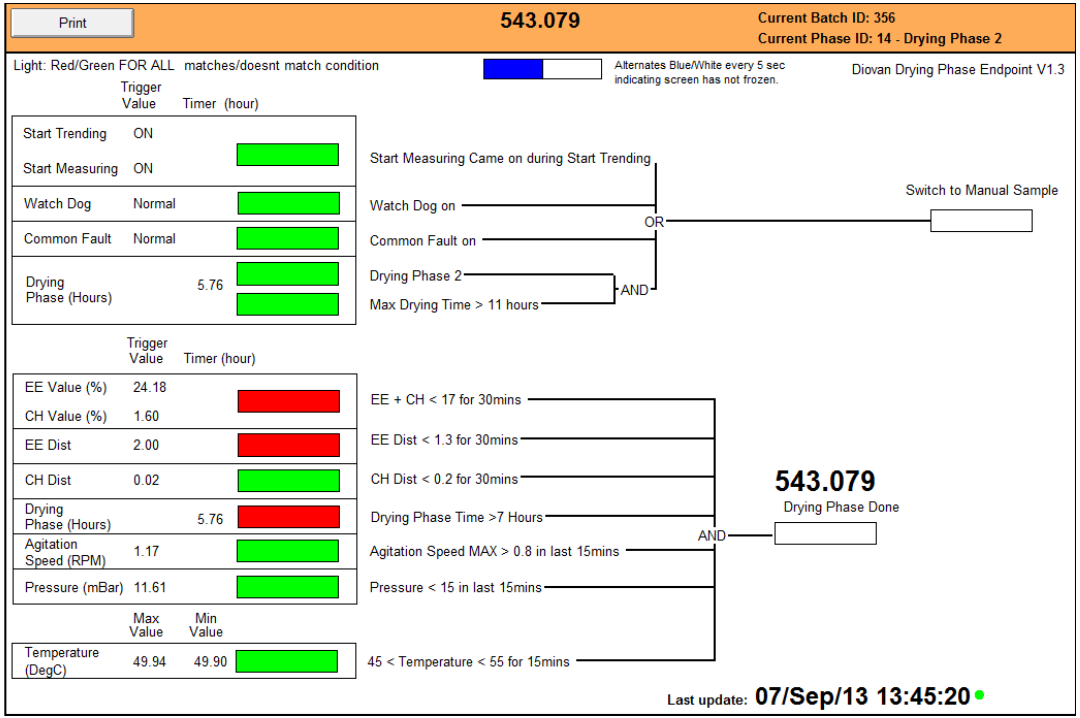

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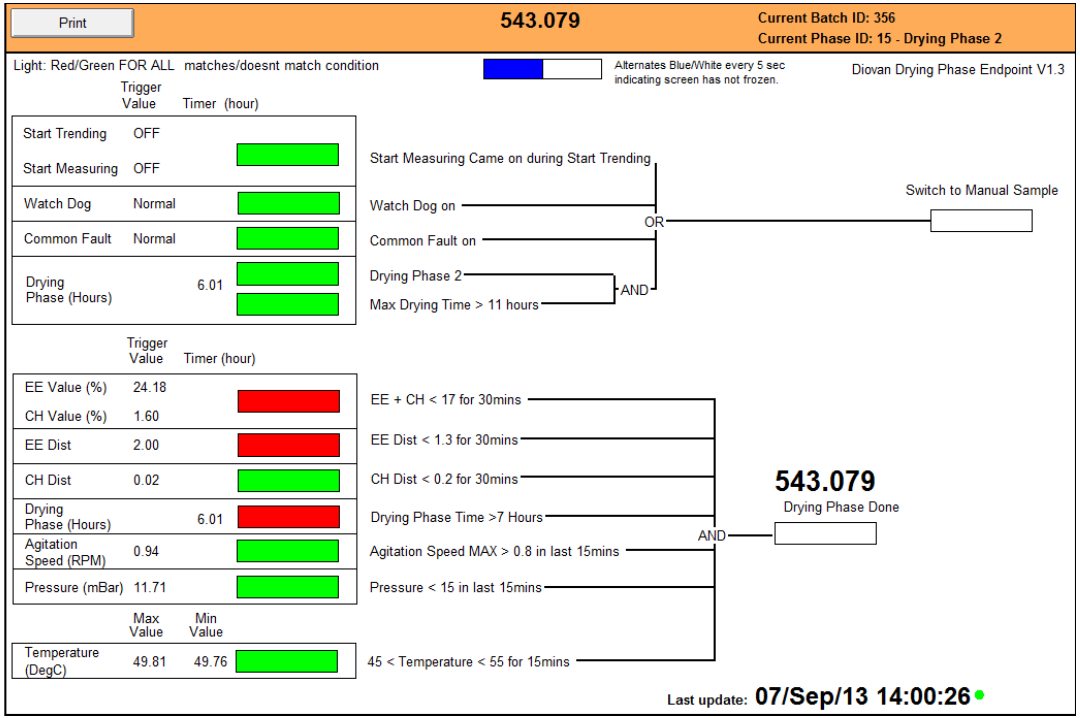

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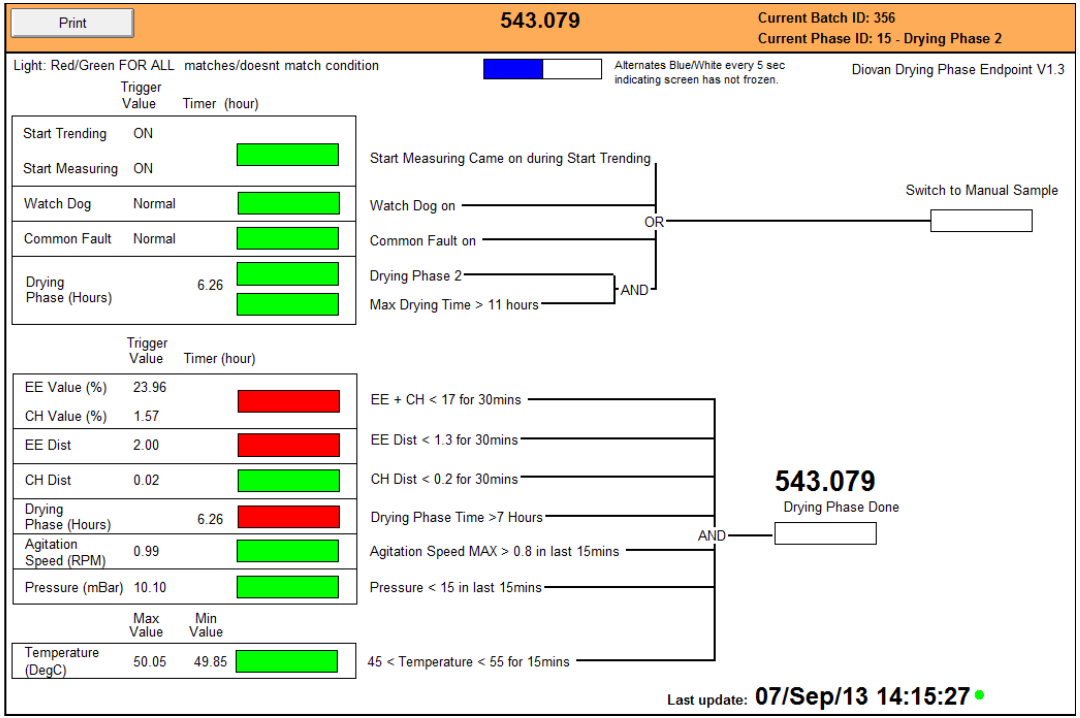

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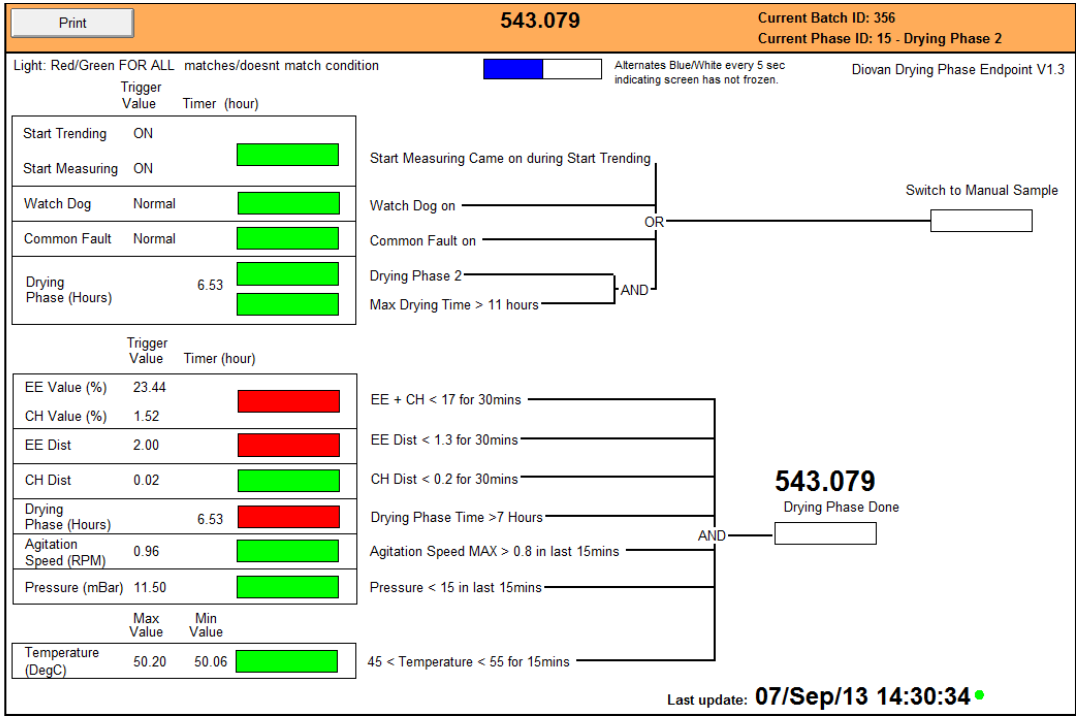

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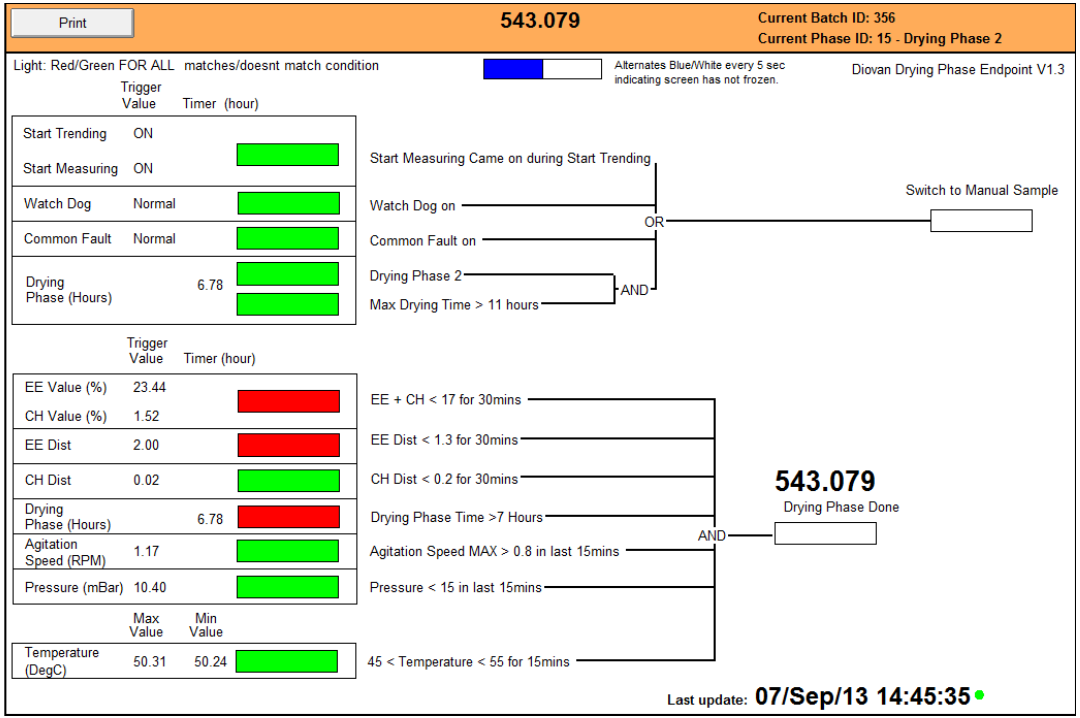

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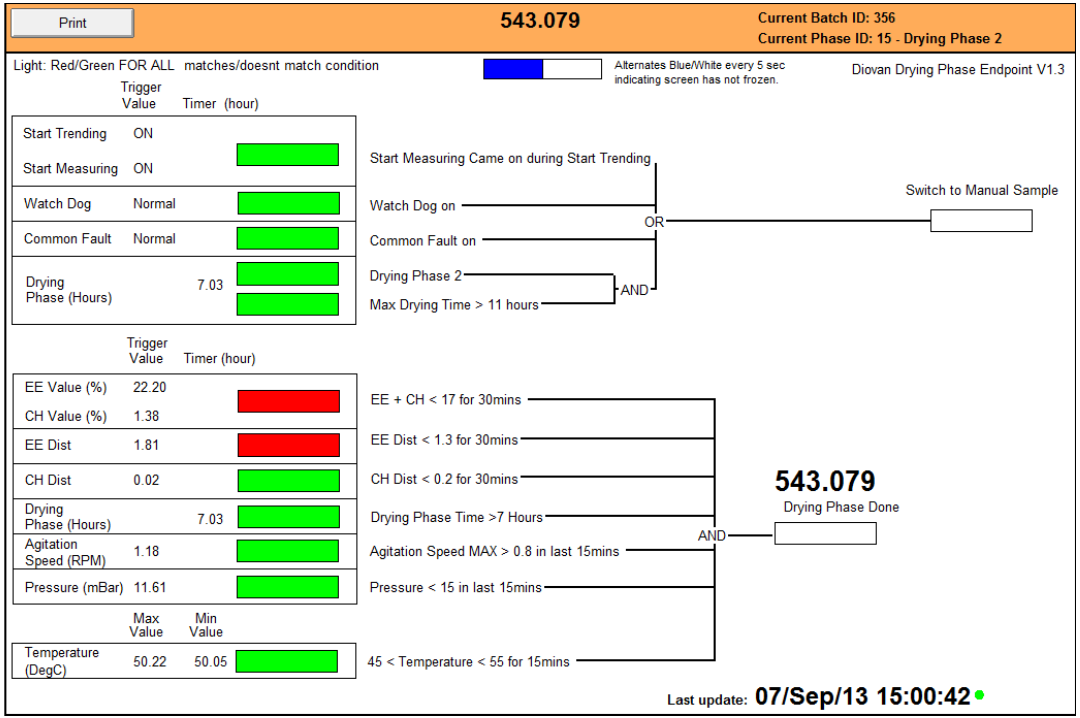

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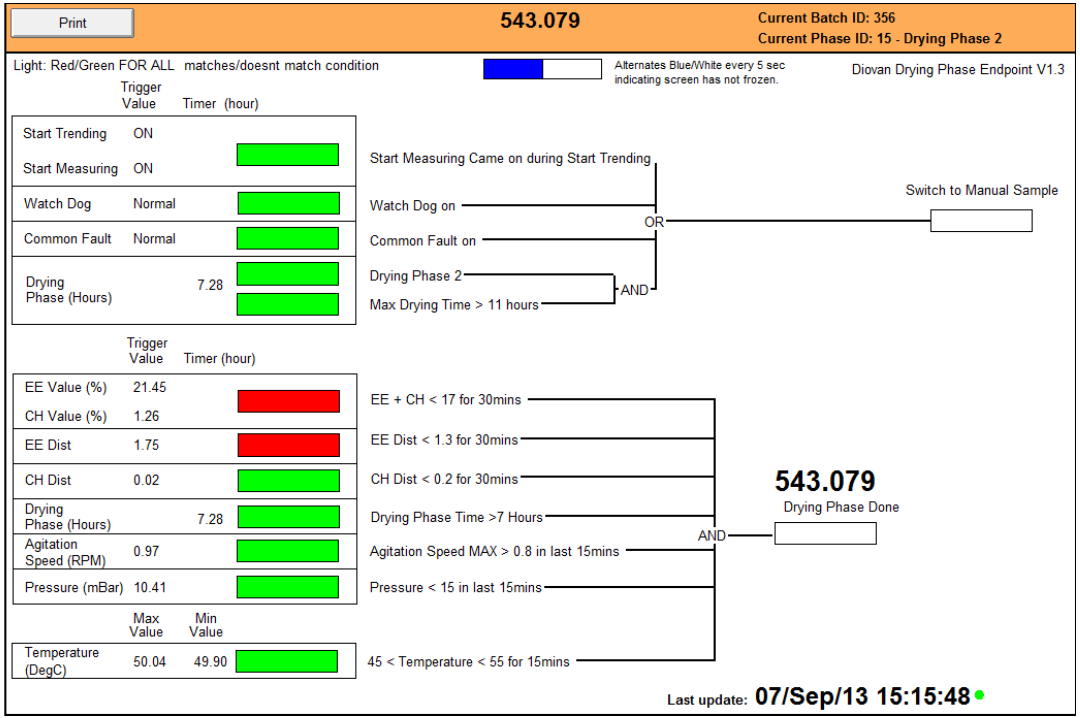

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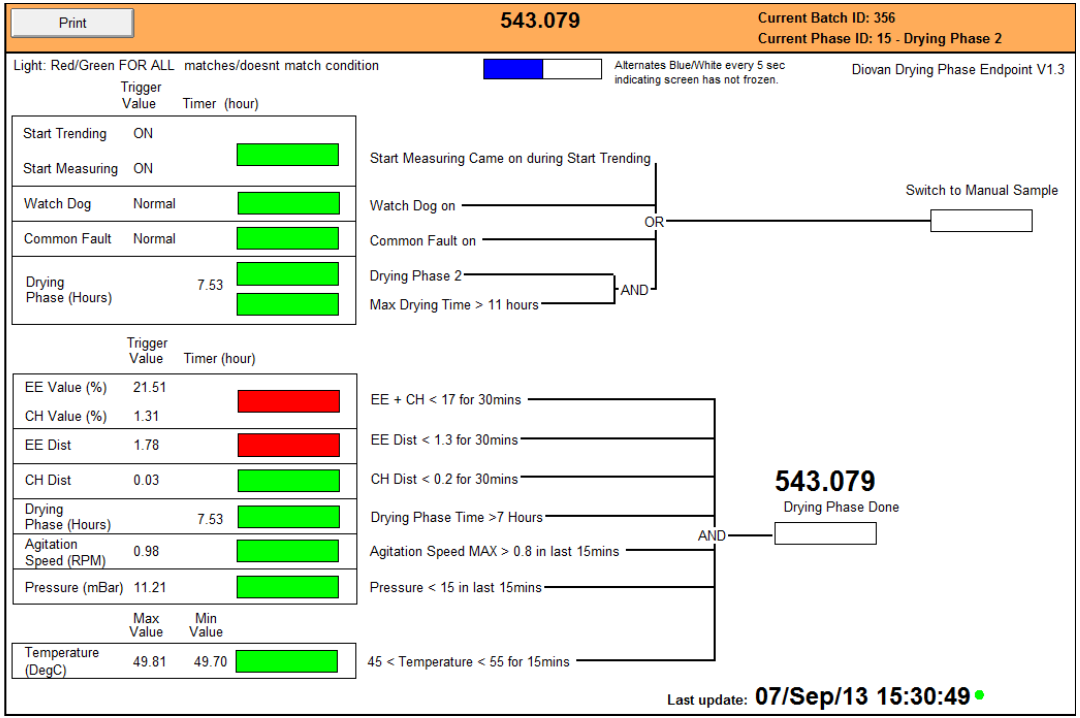

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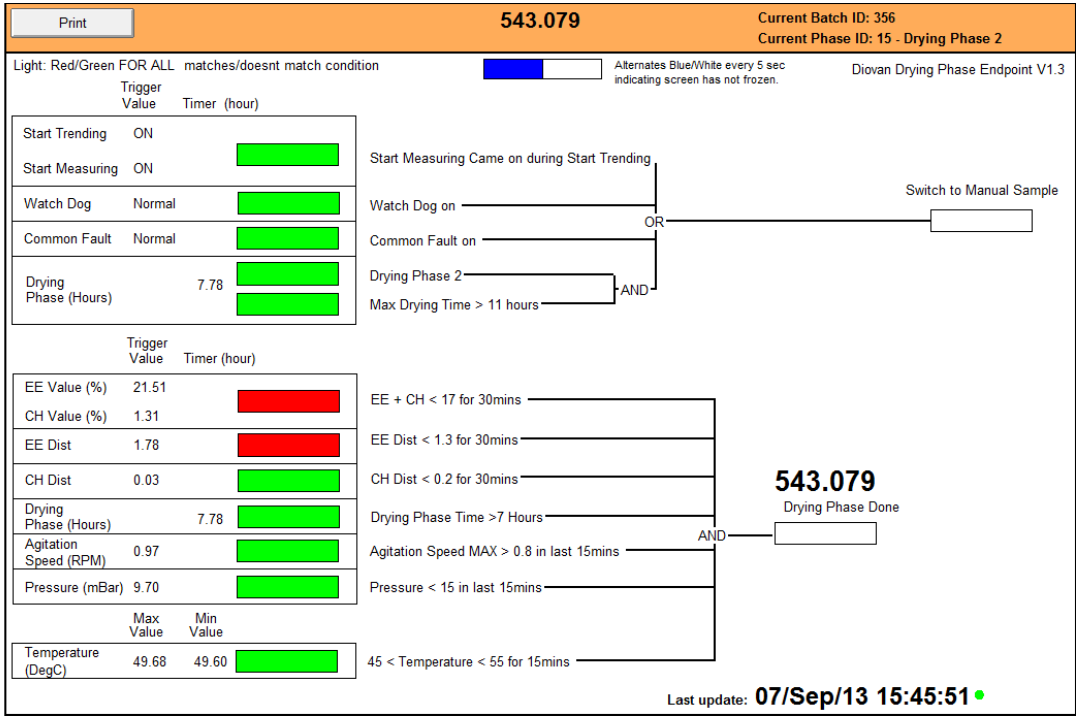

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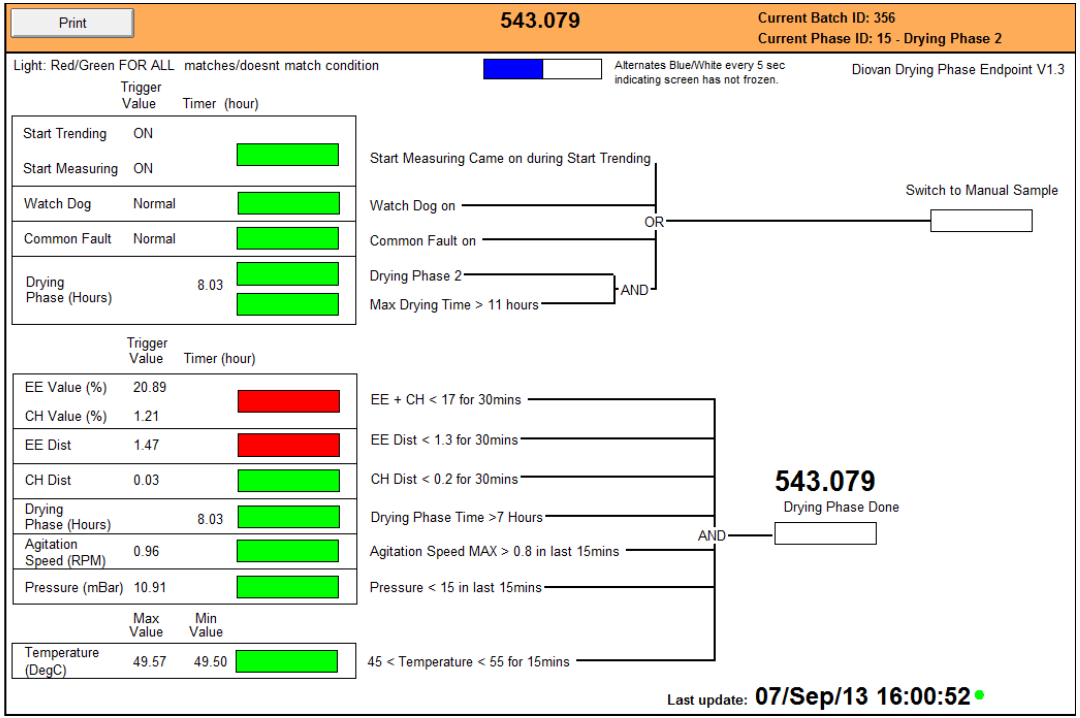

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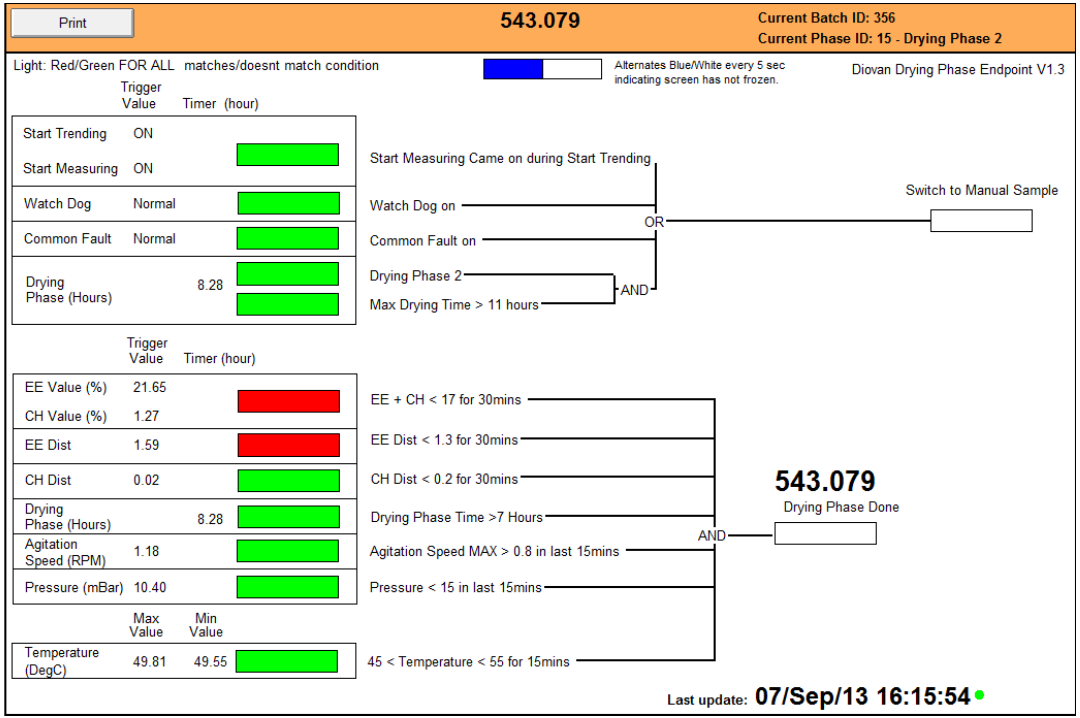

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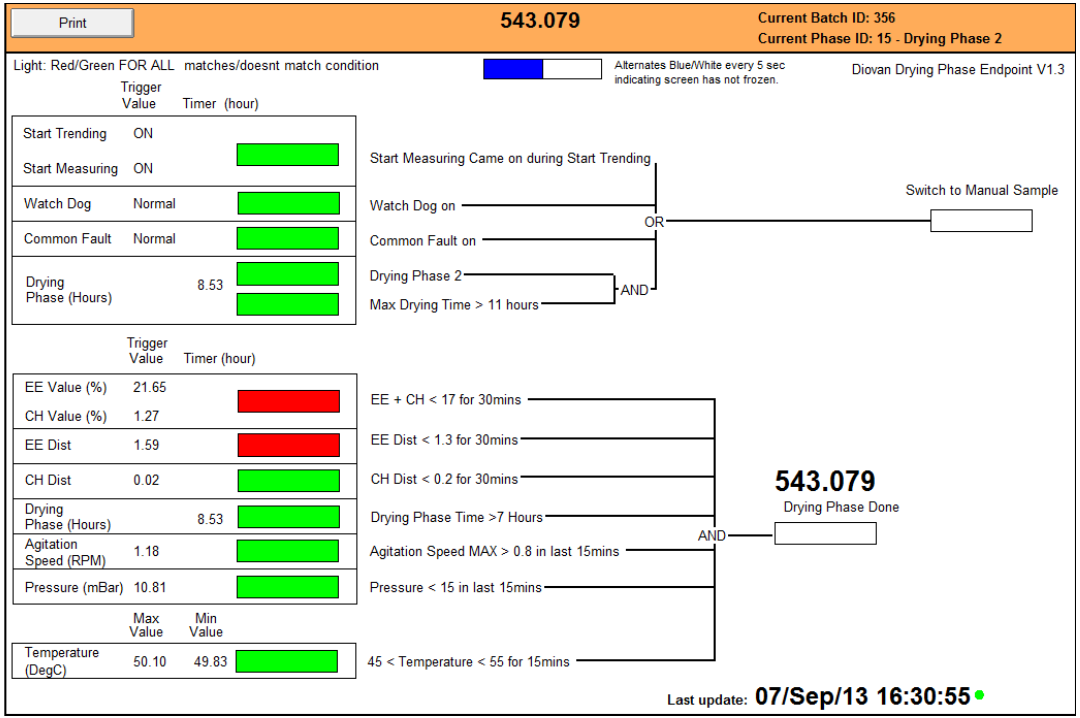

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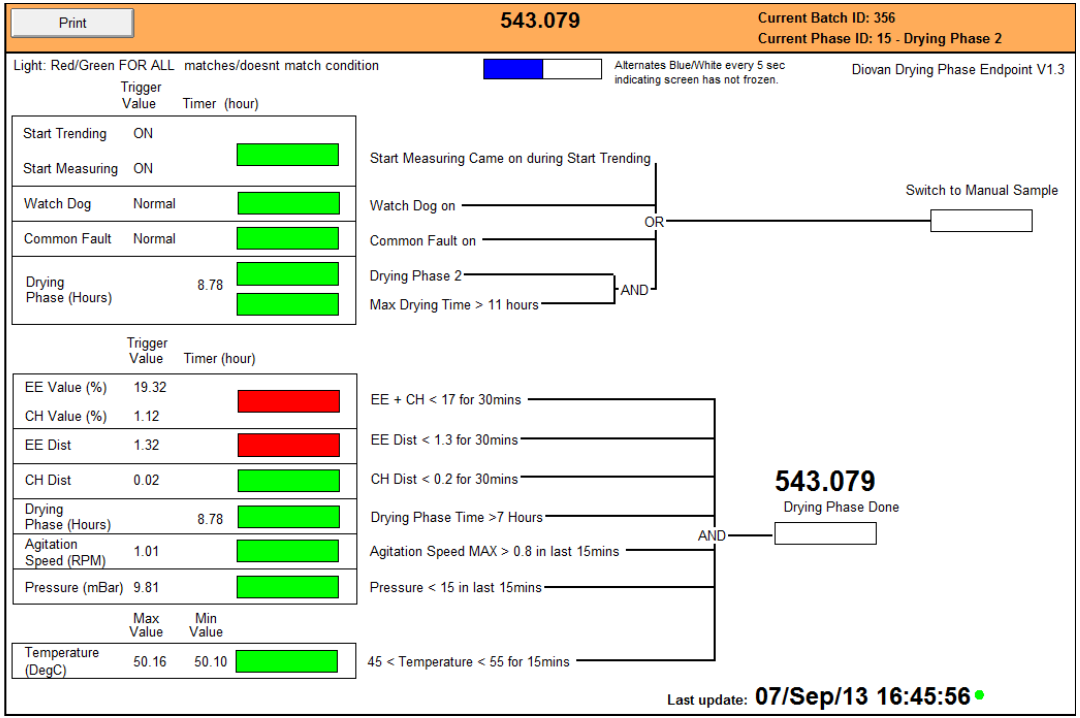

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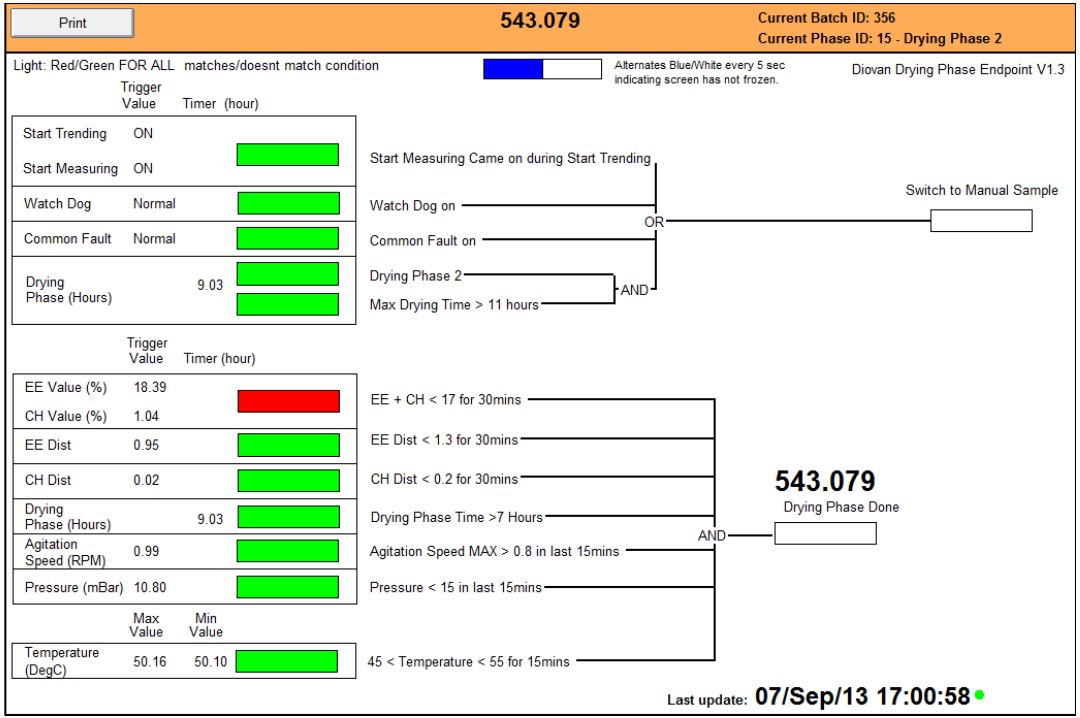

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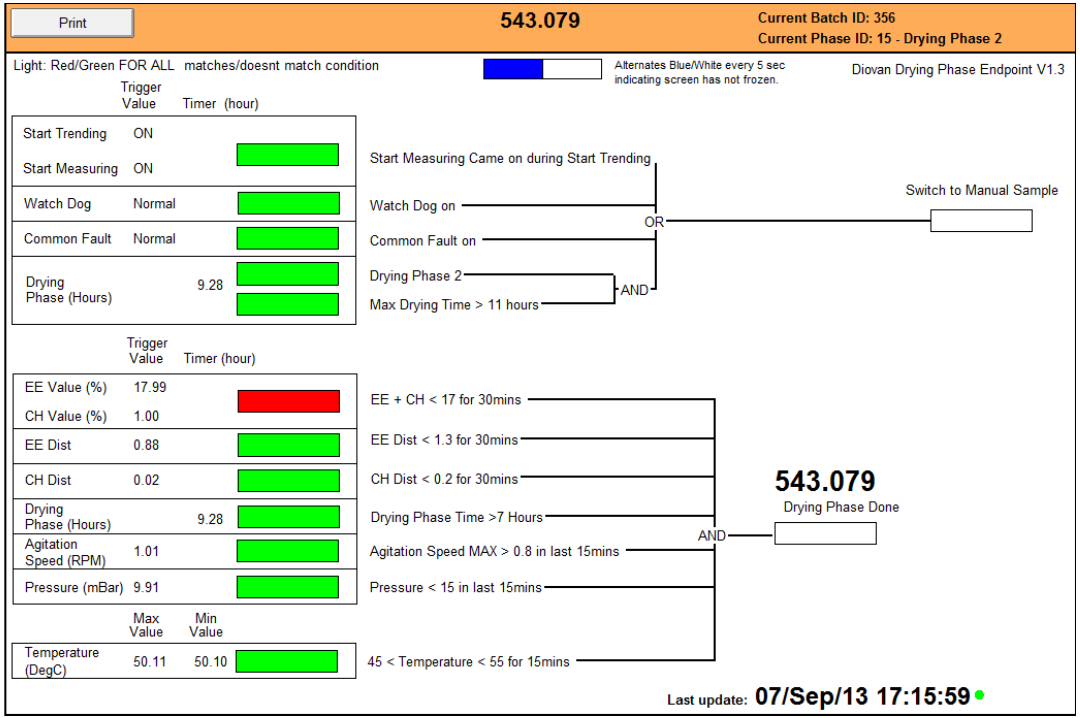

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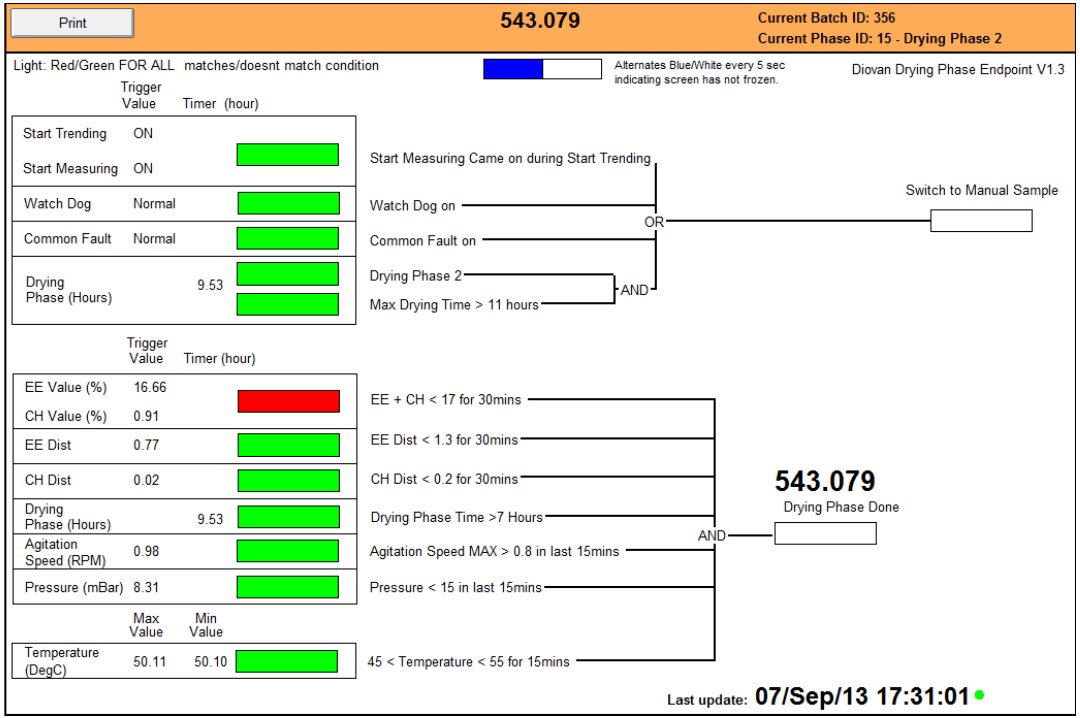

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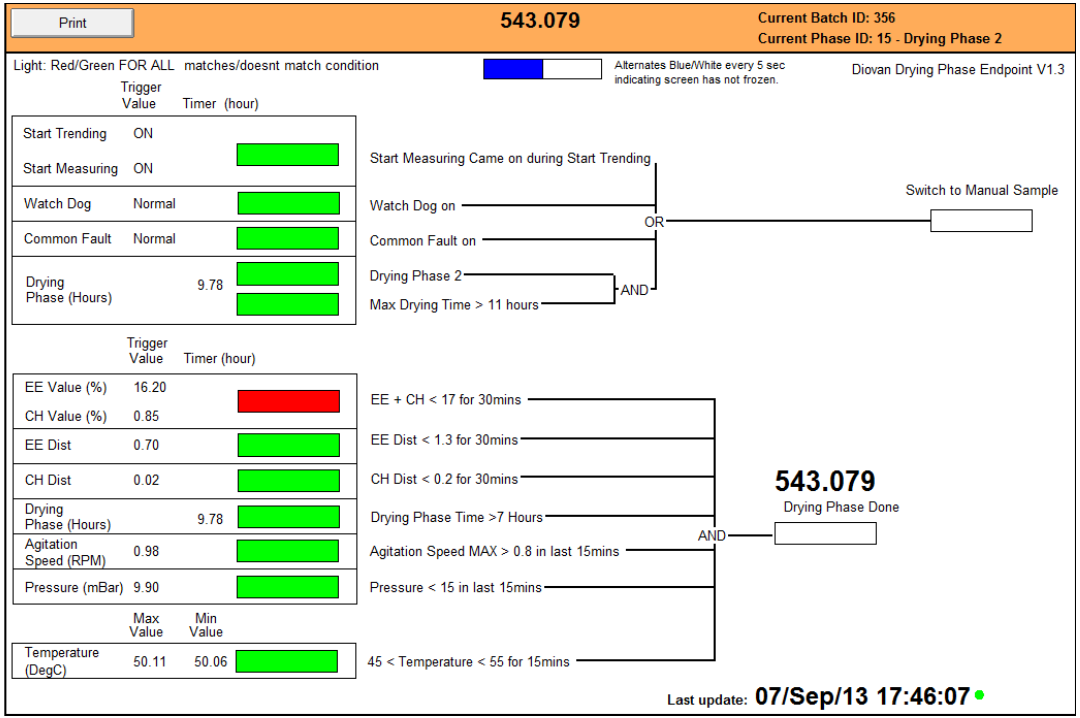

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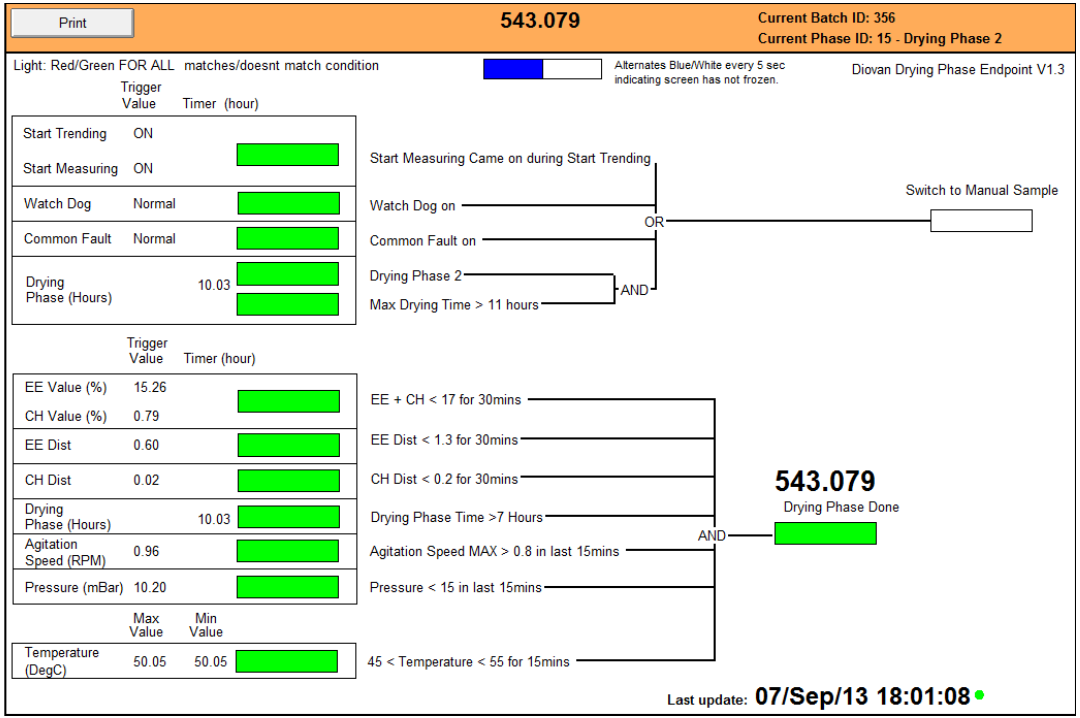

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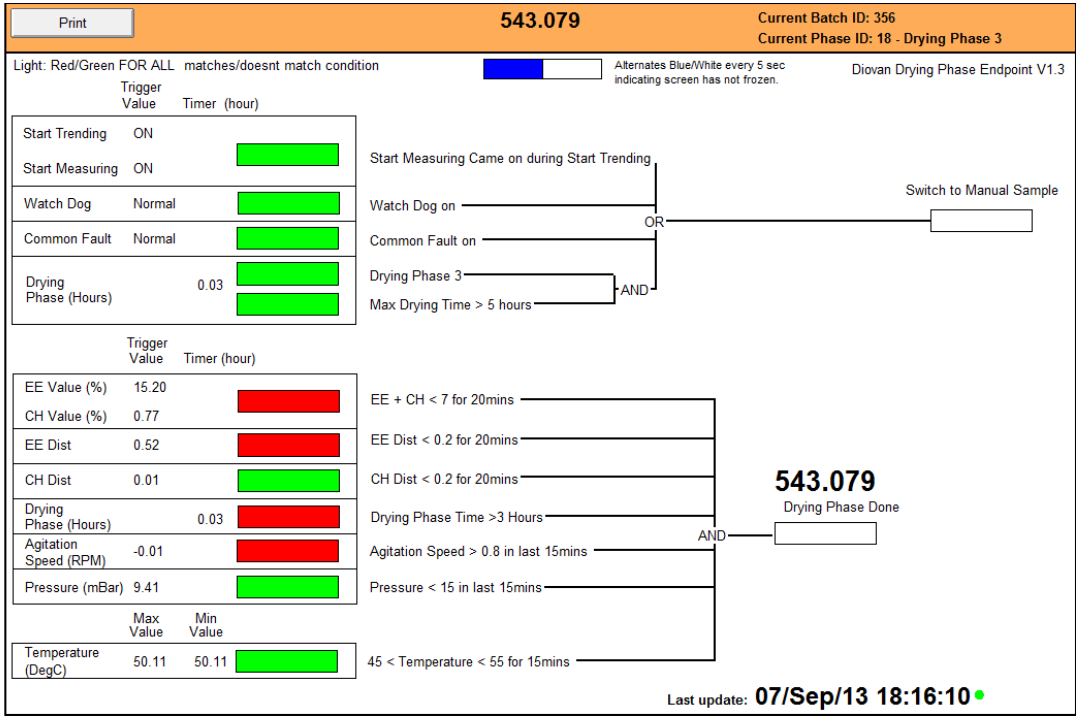

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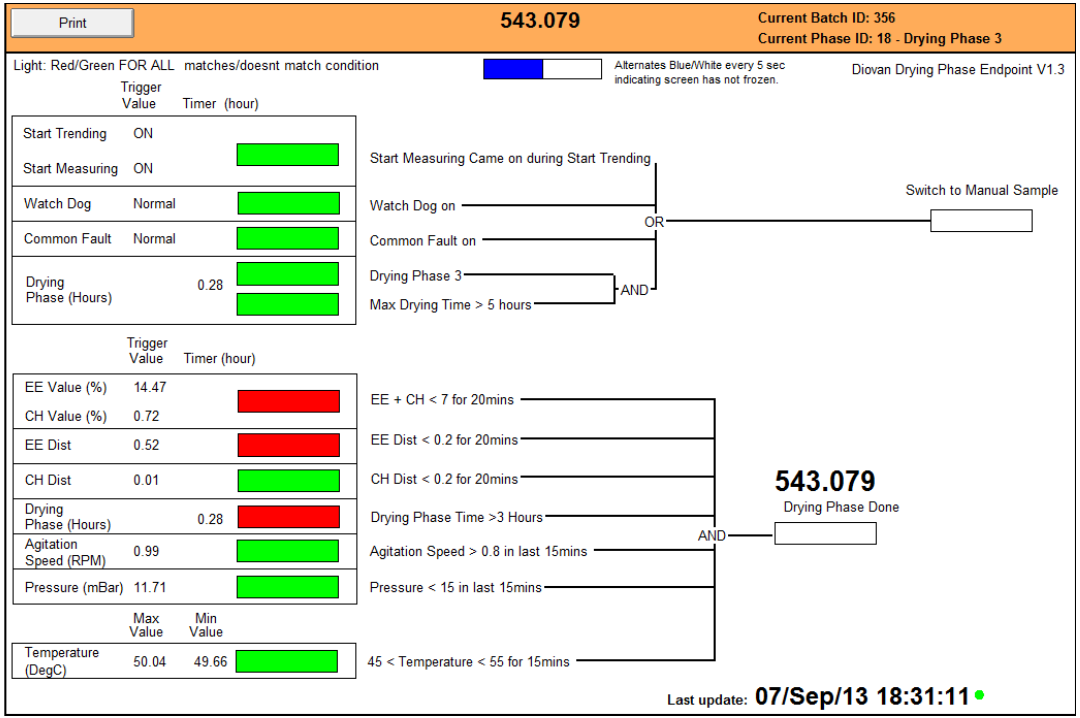

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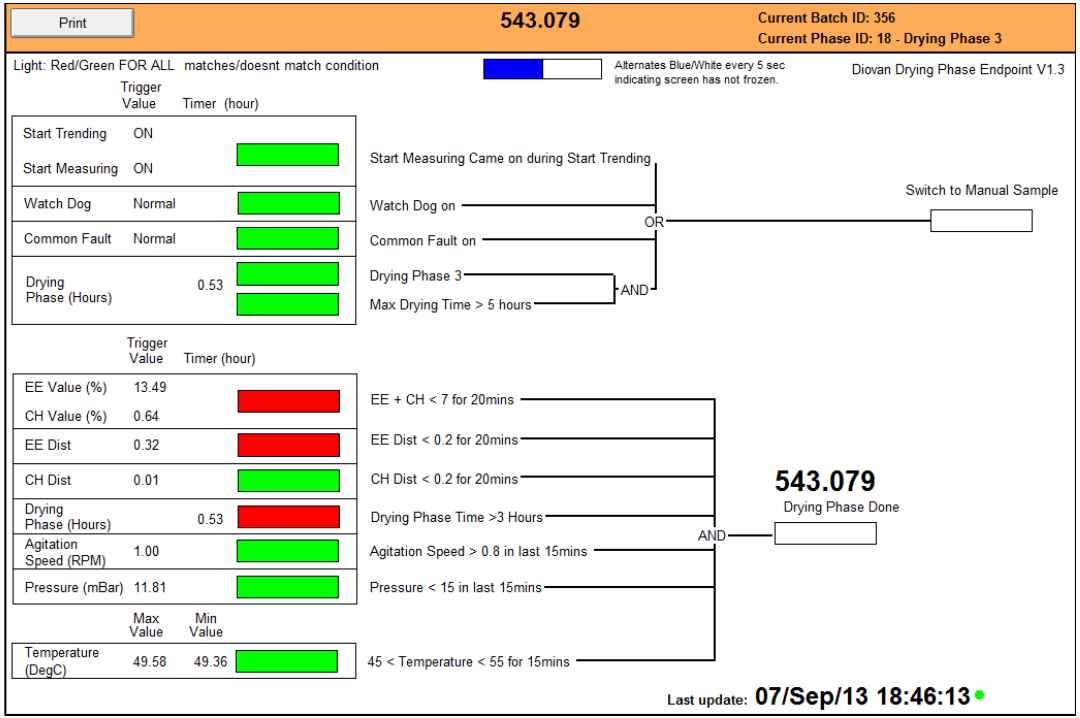

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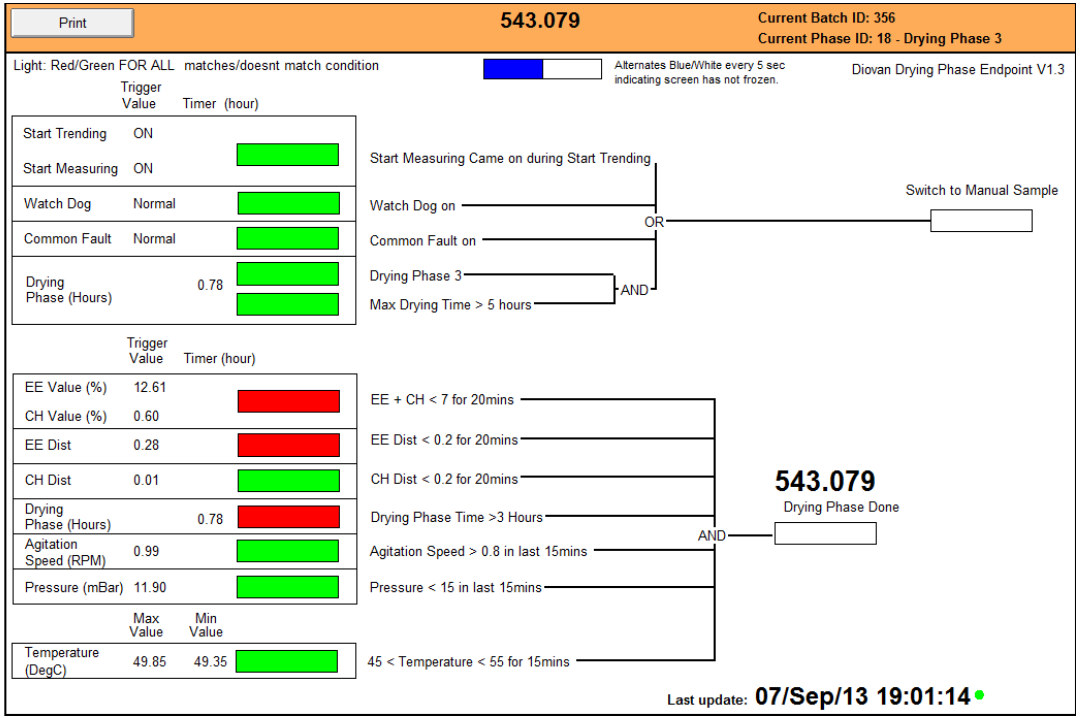

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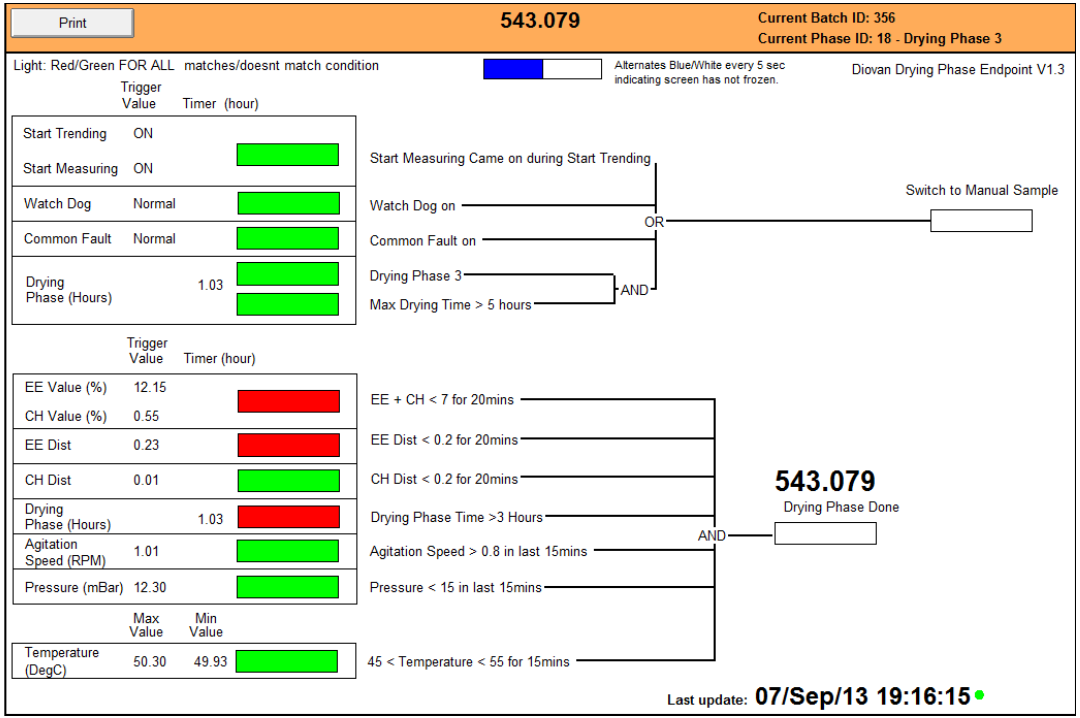

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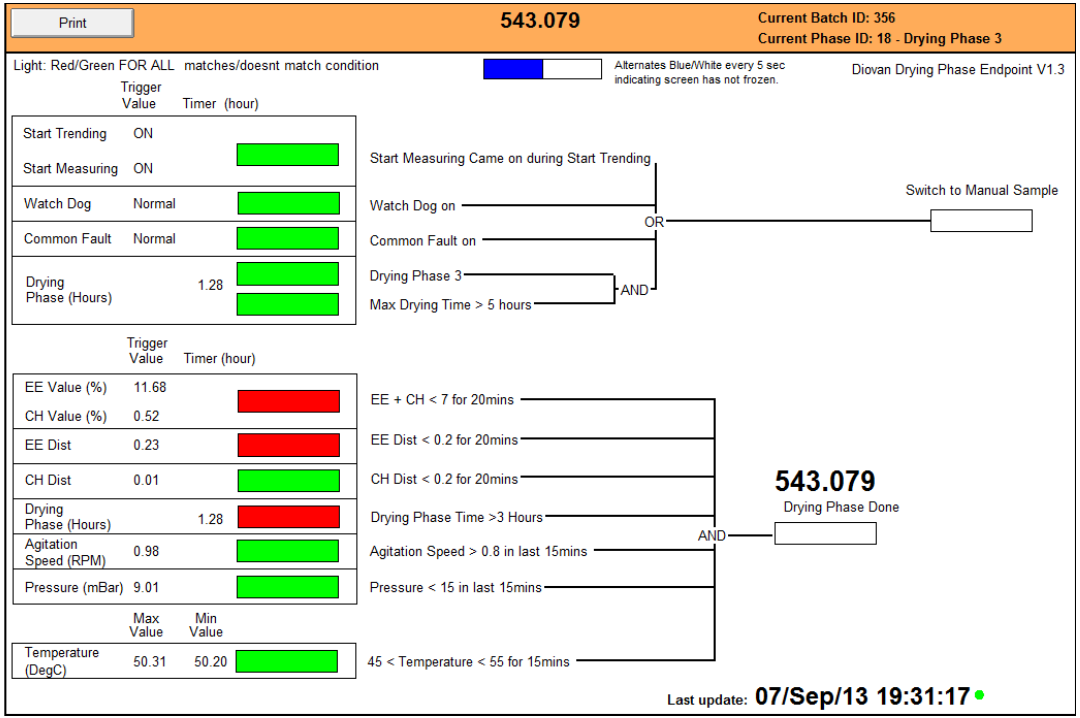

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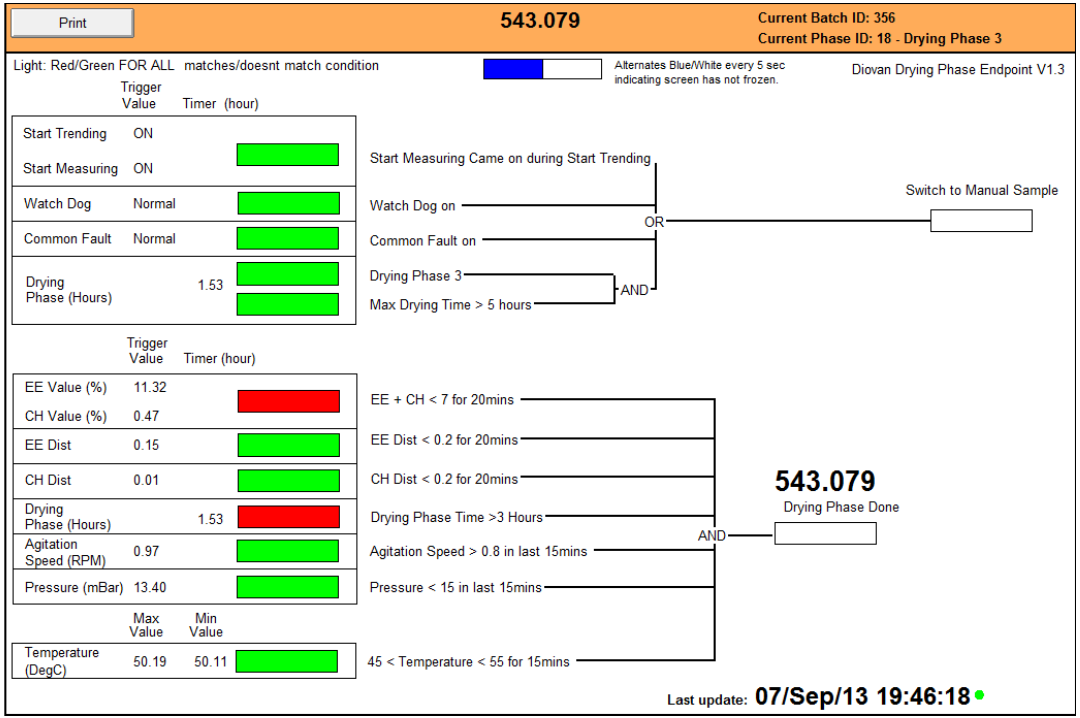

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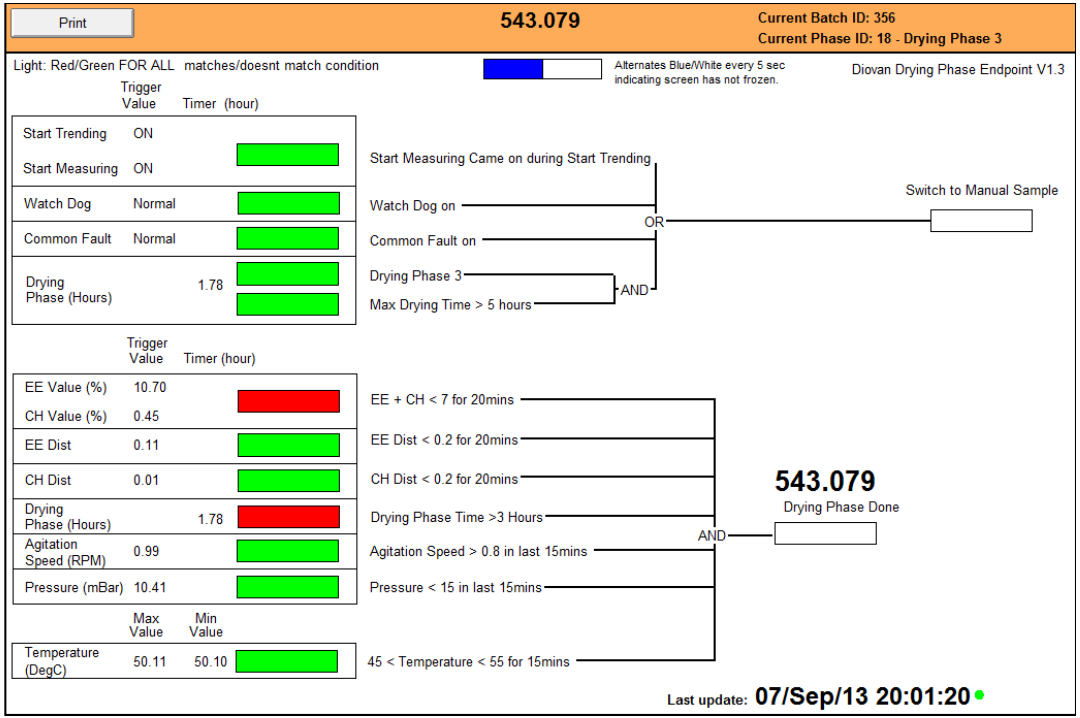

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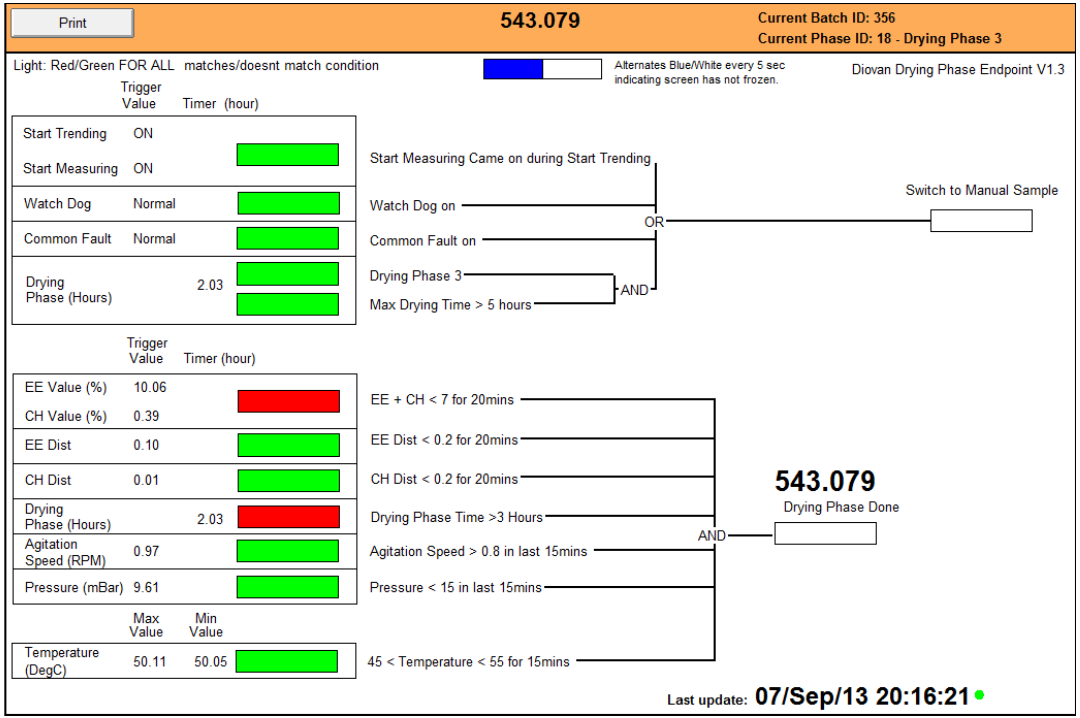

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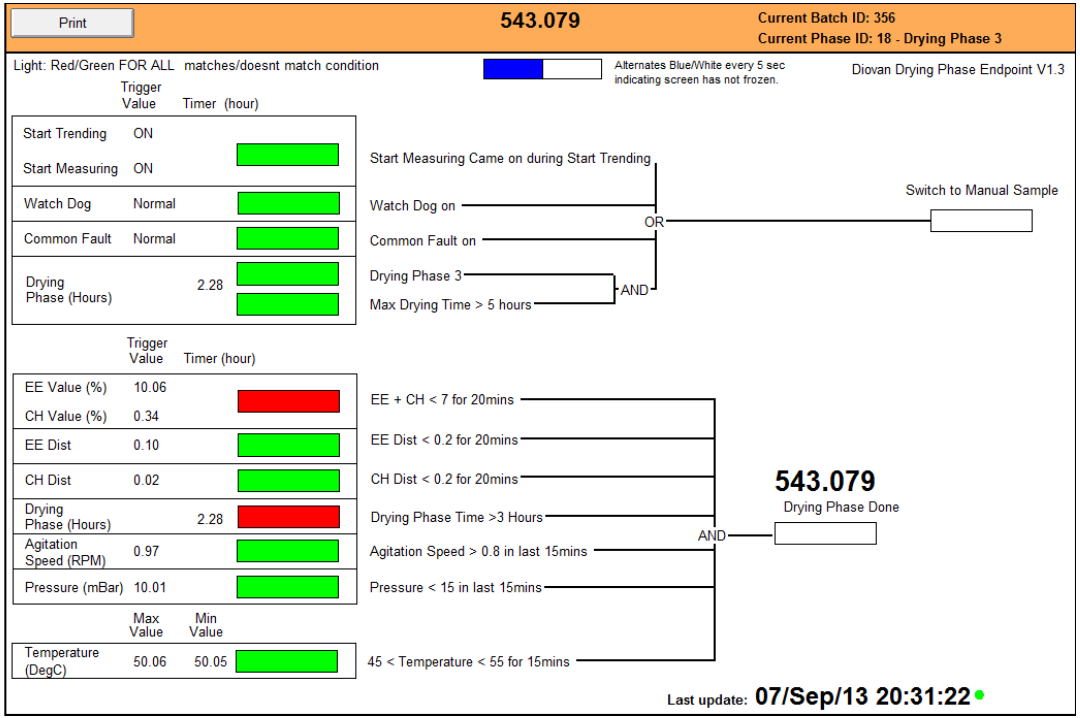

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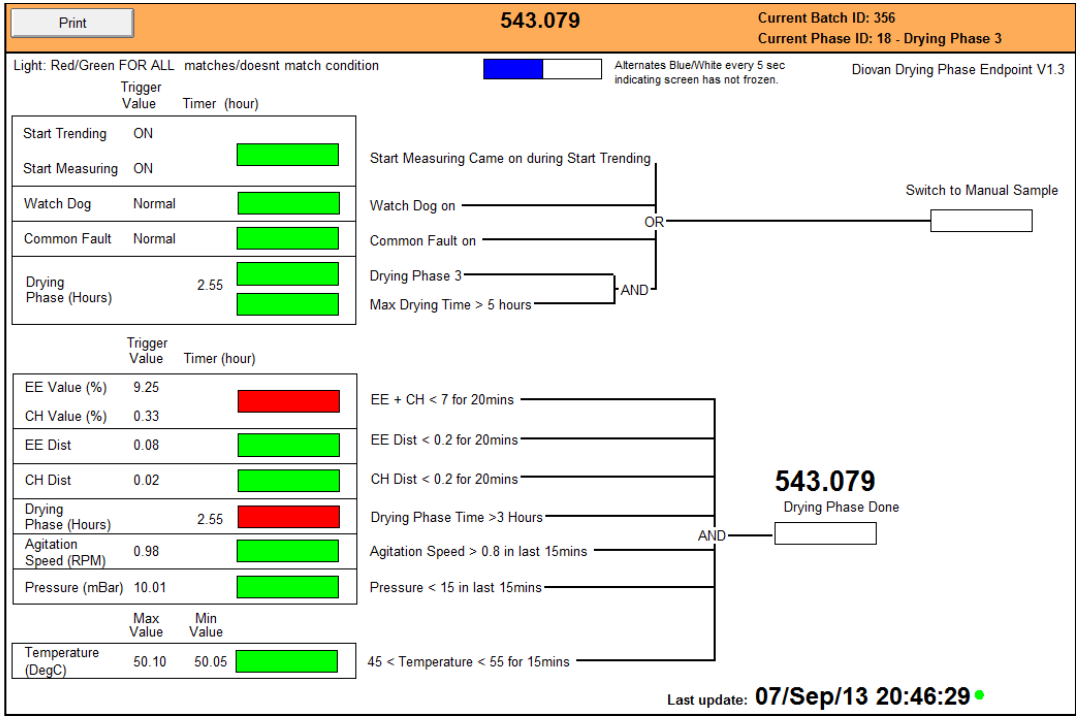

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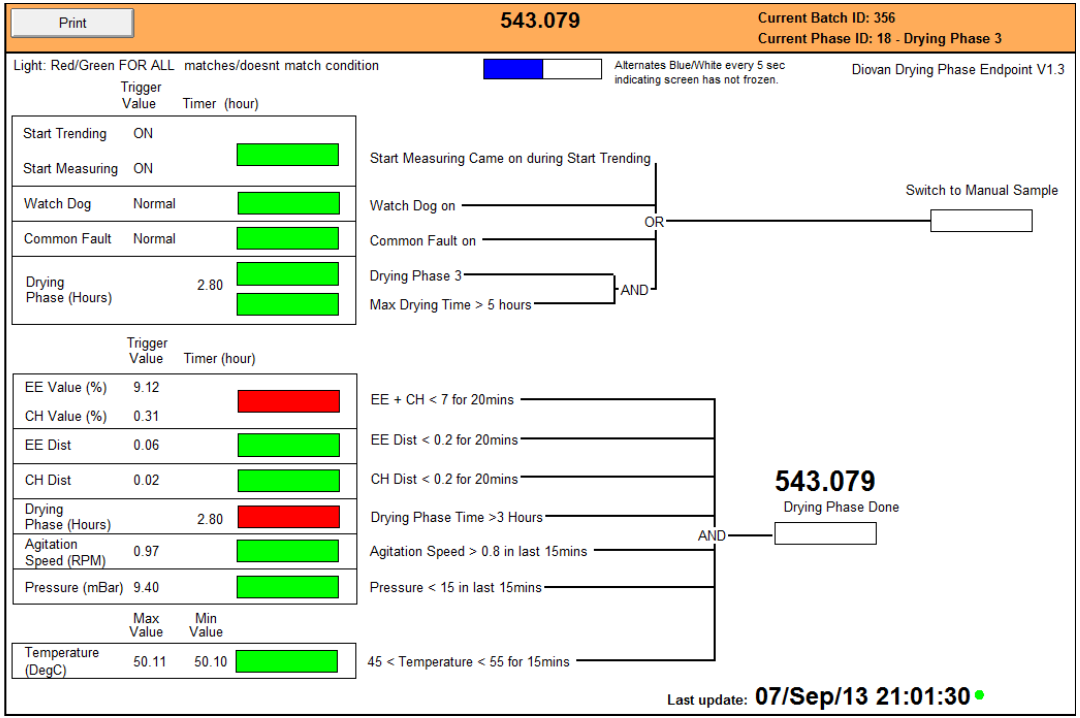

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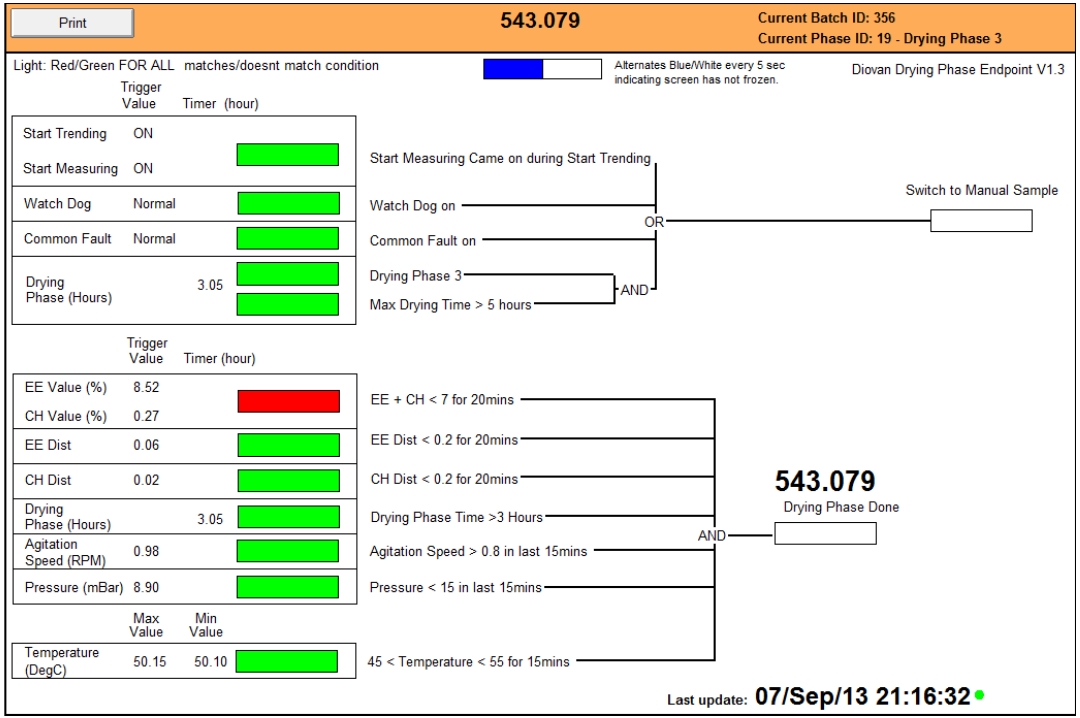

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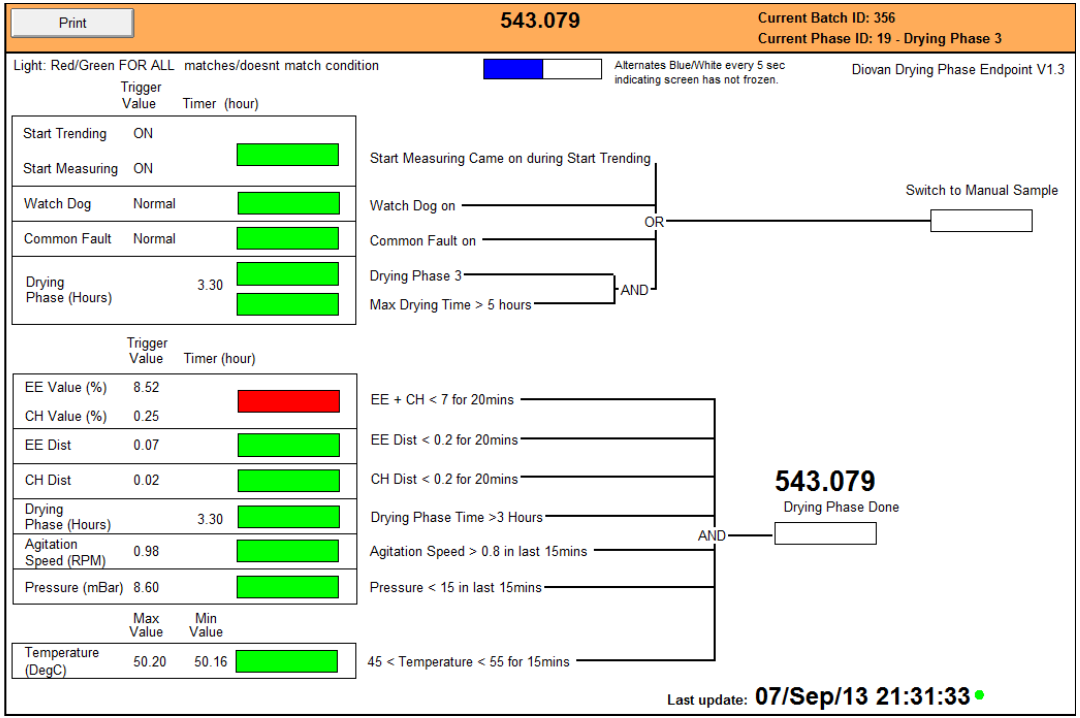
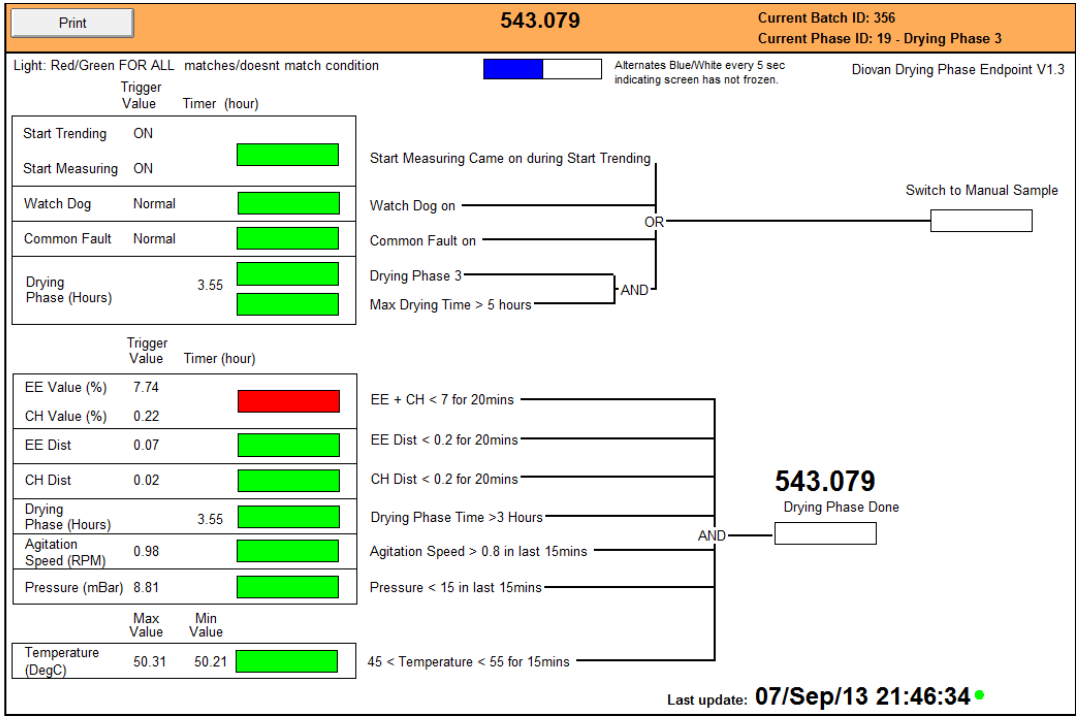


OSIsoft PI System Supporting Process decisions – *playback*



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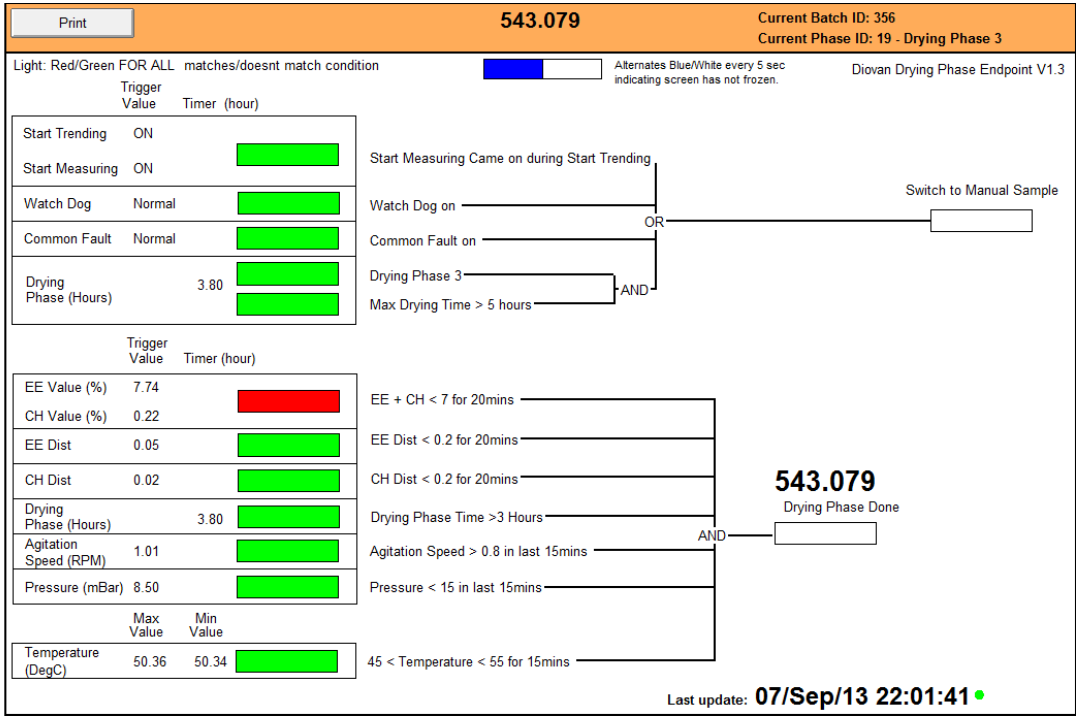

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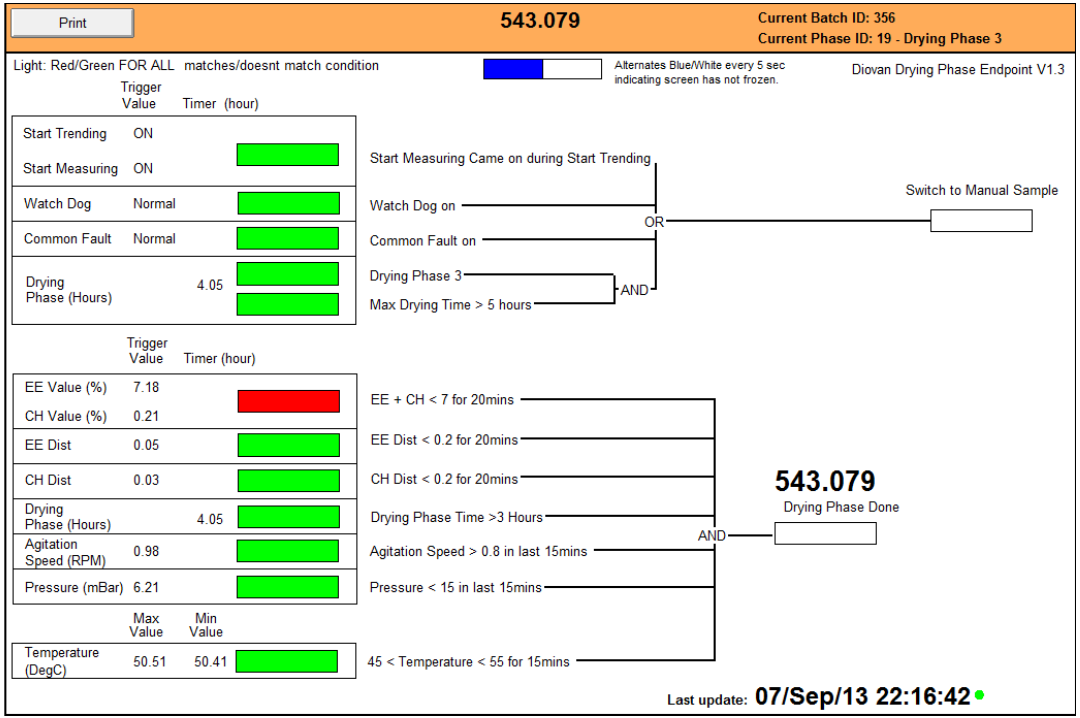

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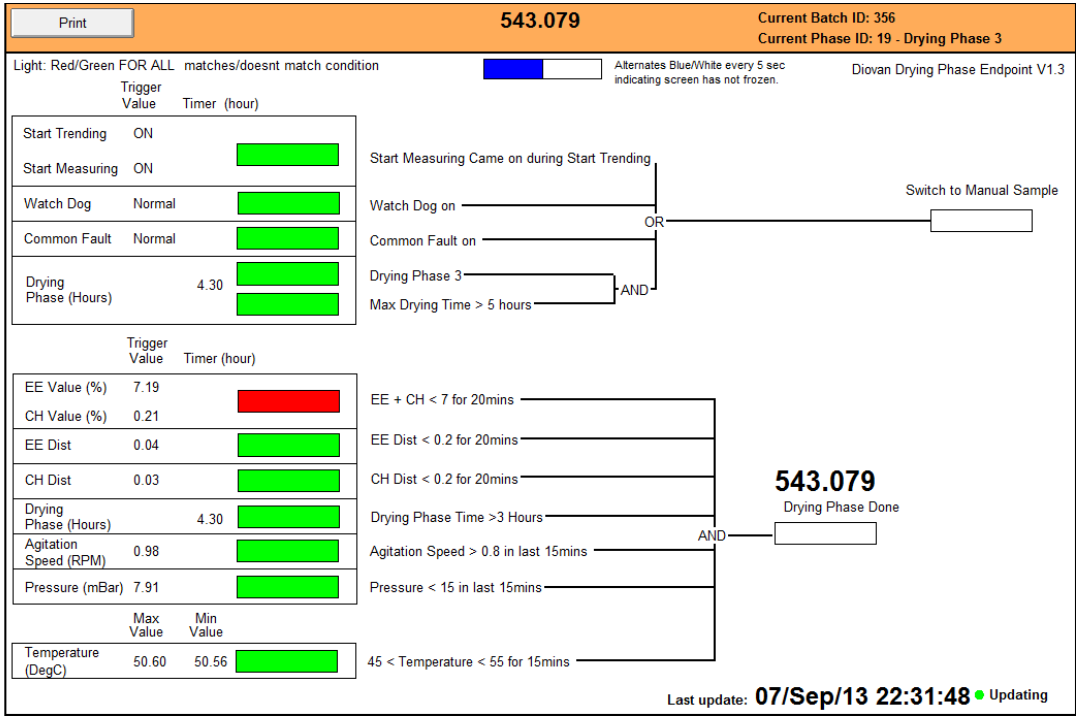

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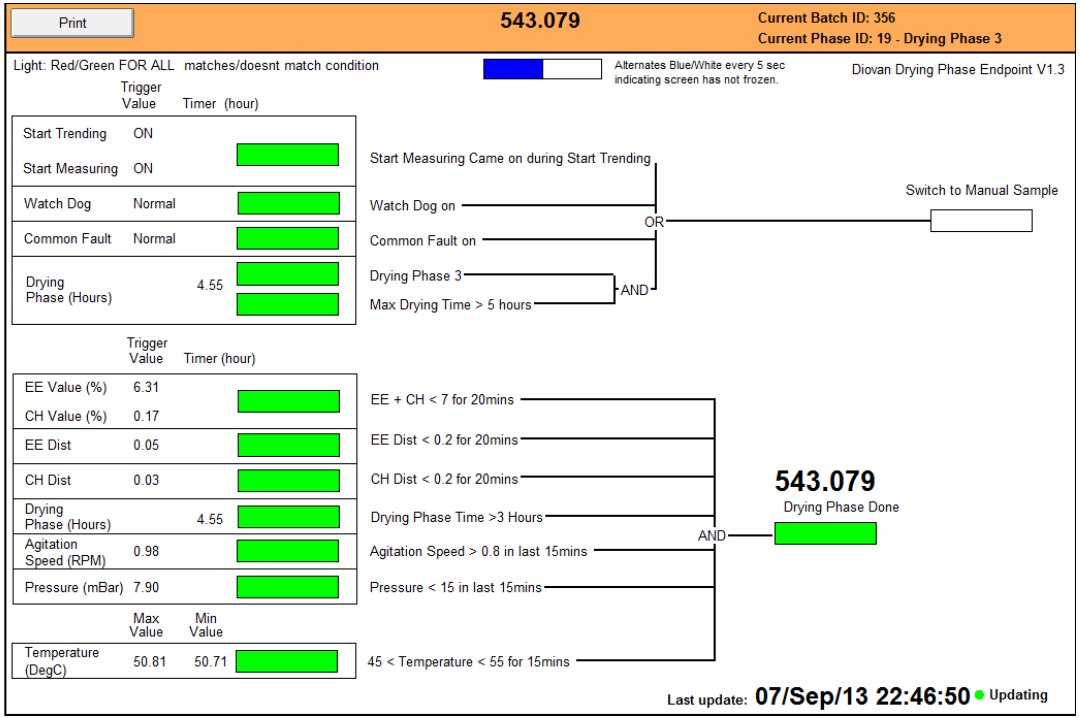

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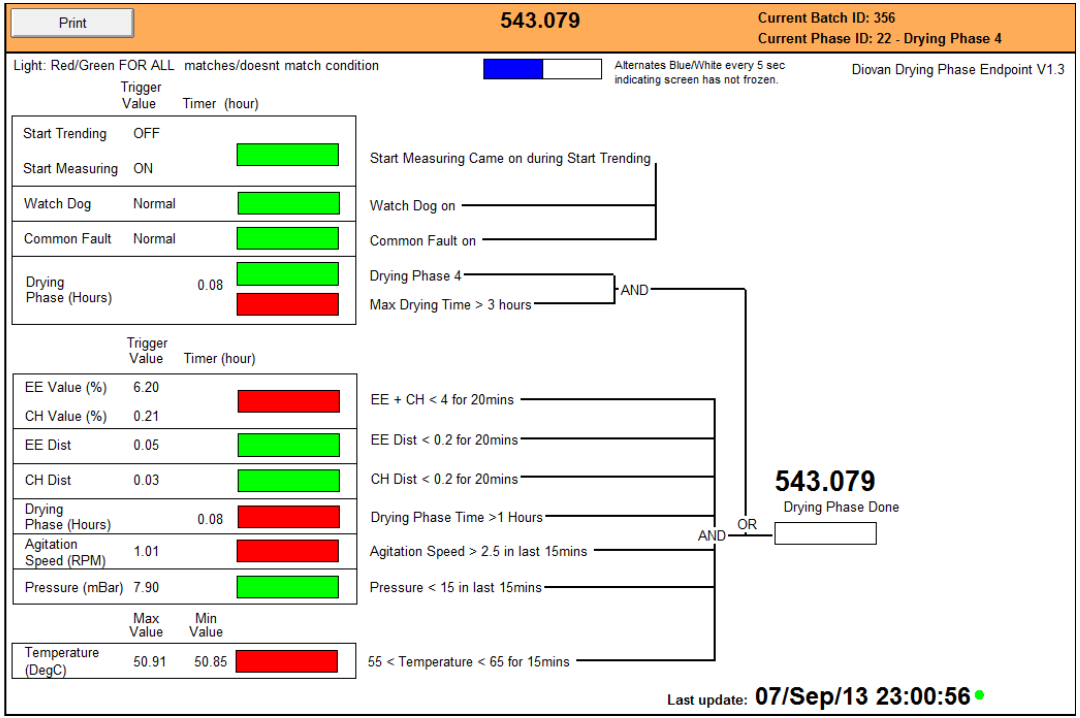

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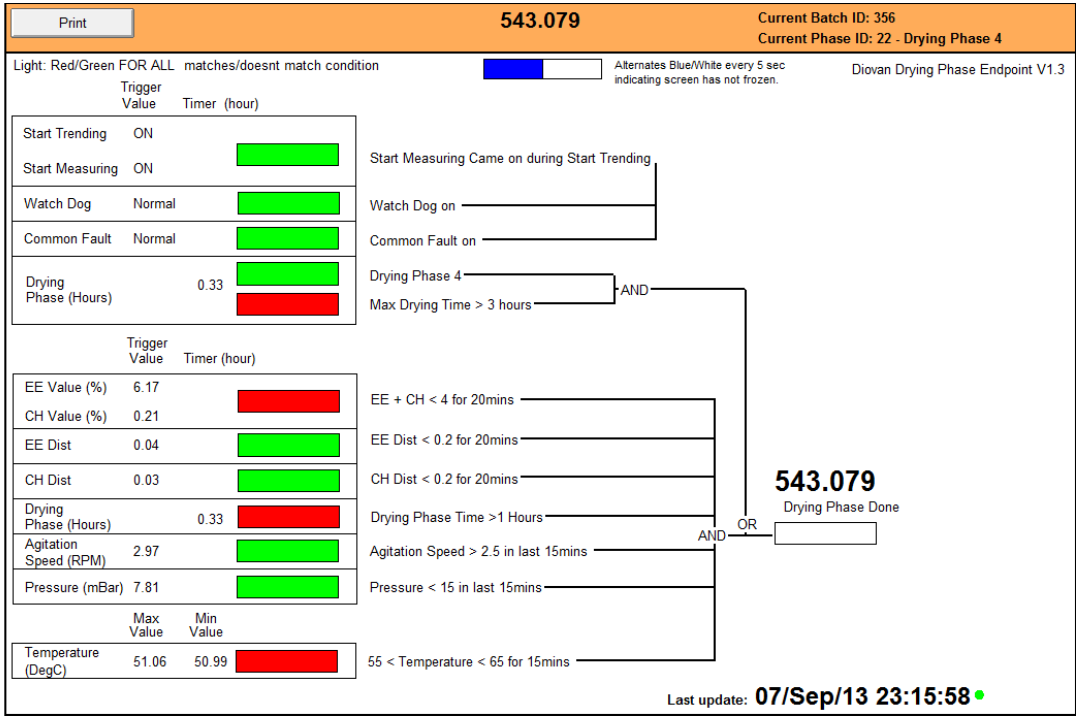

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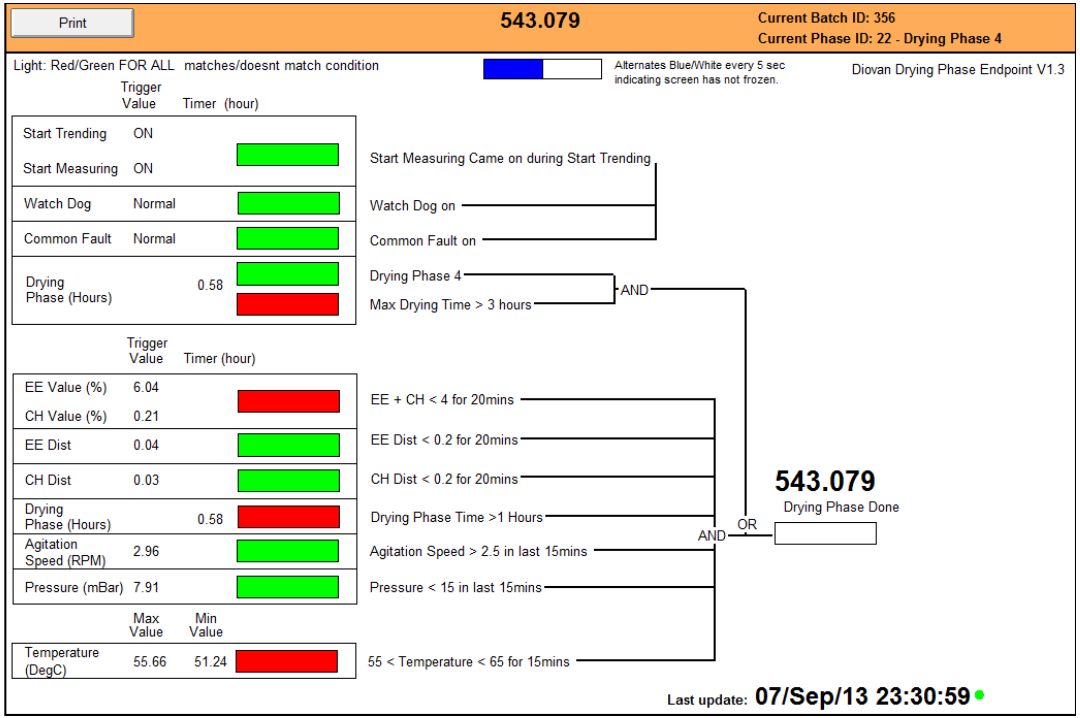
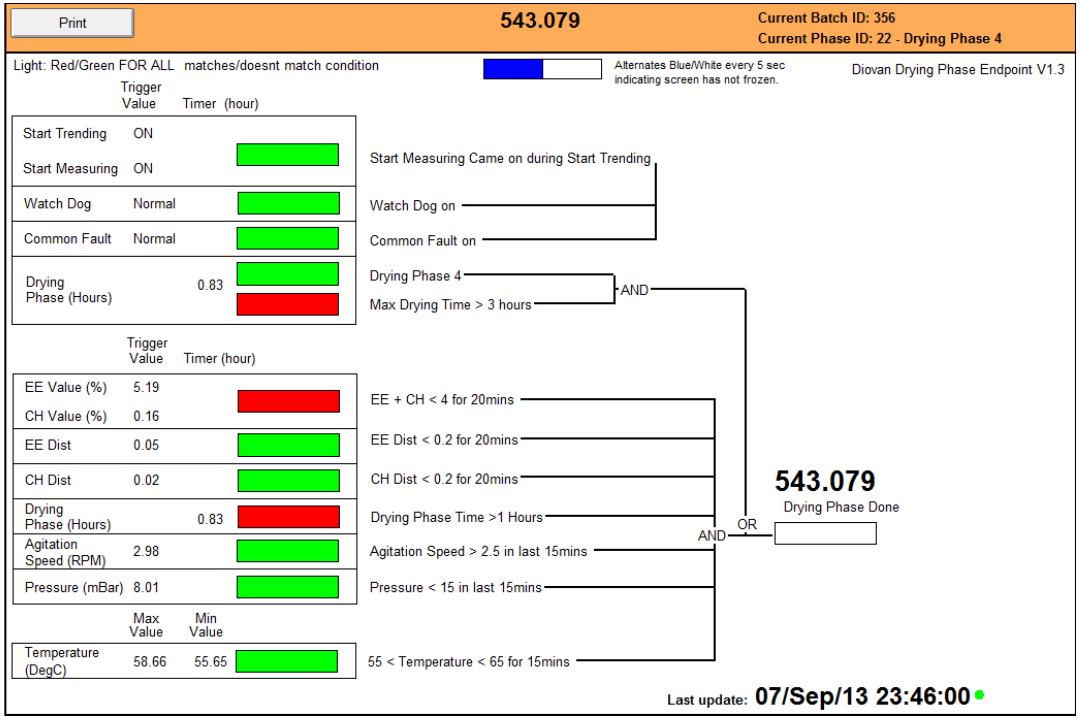


OSIsoft PI System Supporting Process decisions – *playback*



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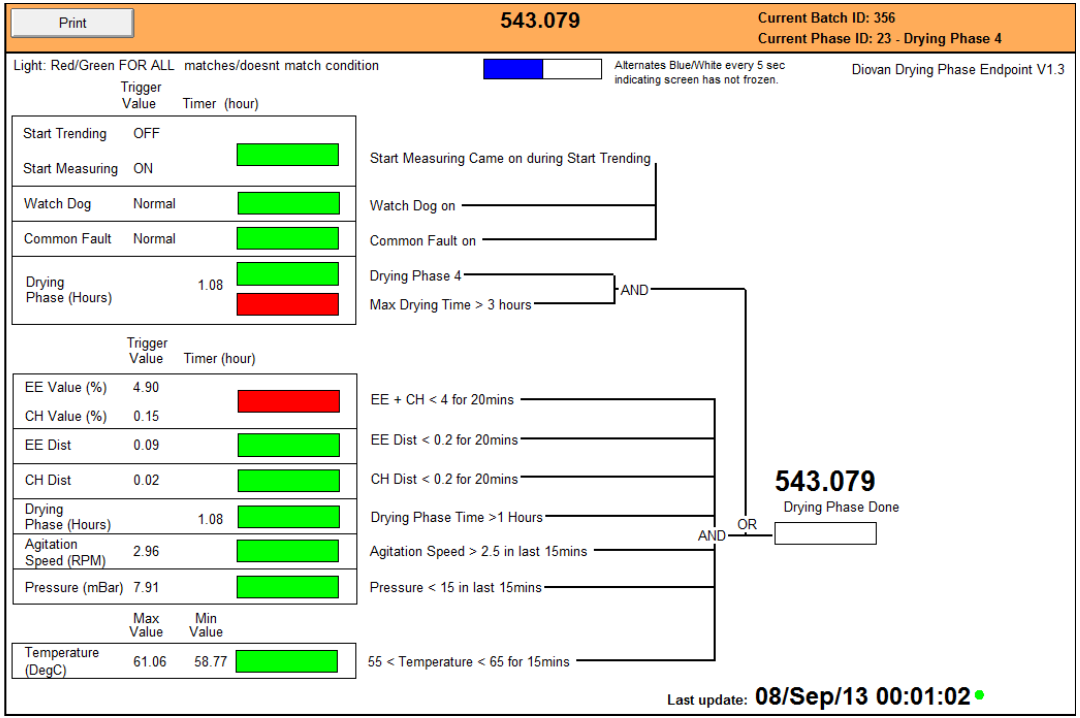

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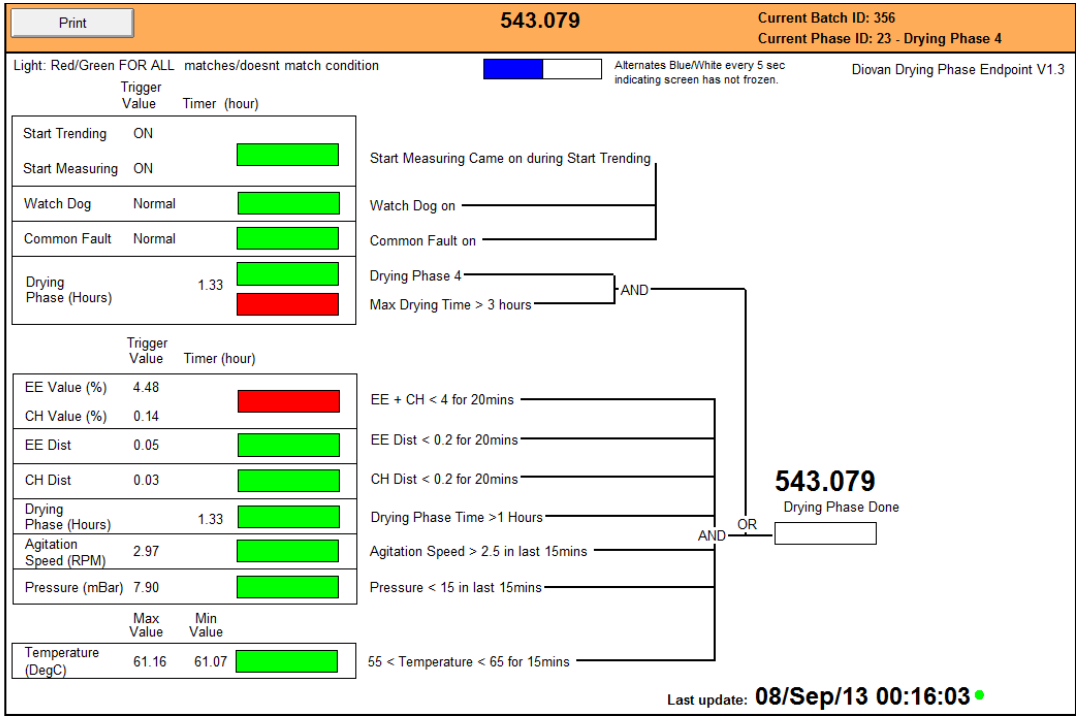
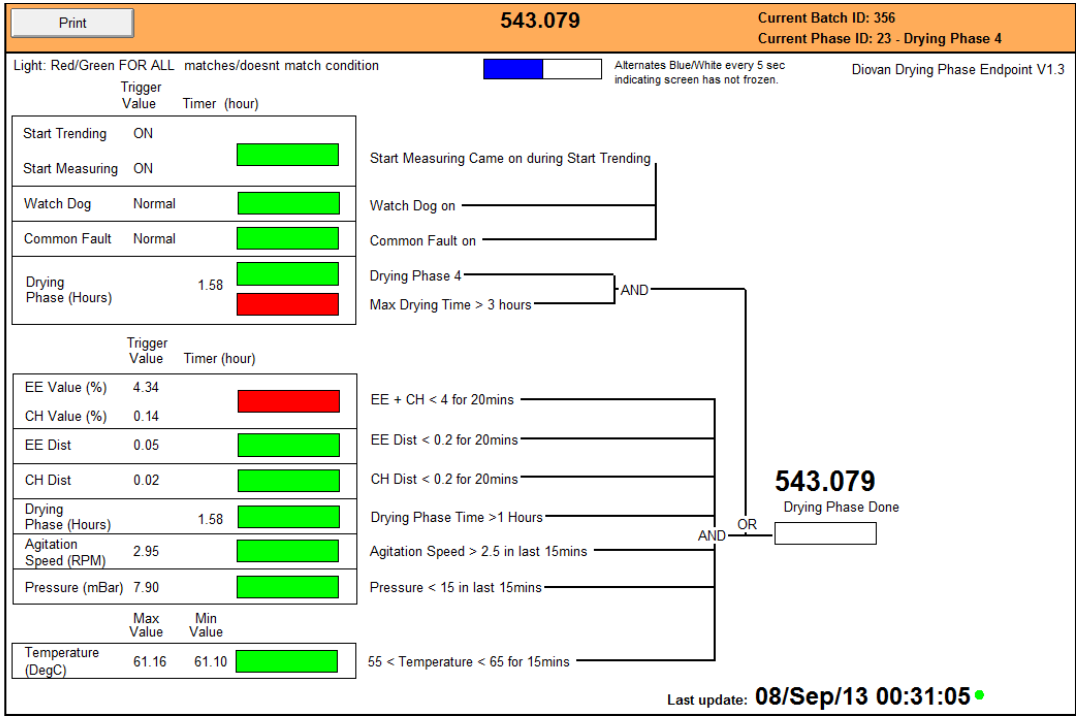
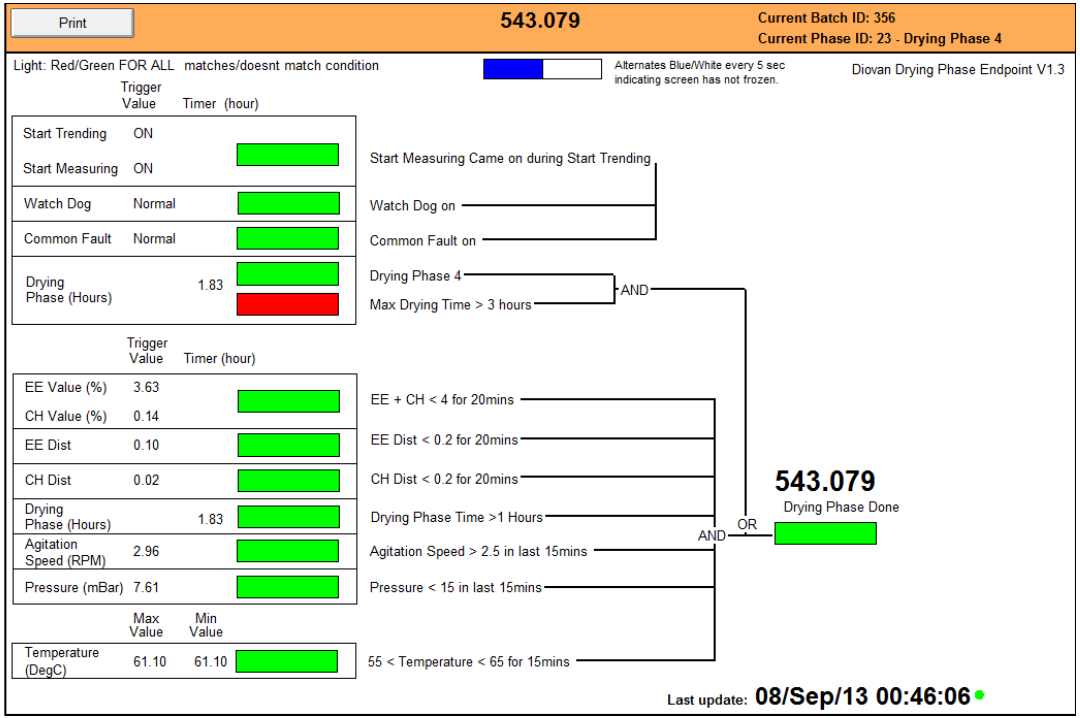


OSIsoft PI System Supporting Process decisions – *playback*



OSIsoft PI System Supporting Process decisions – *playback*



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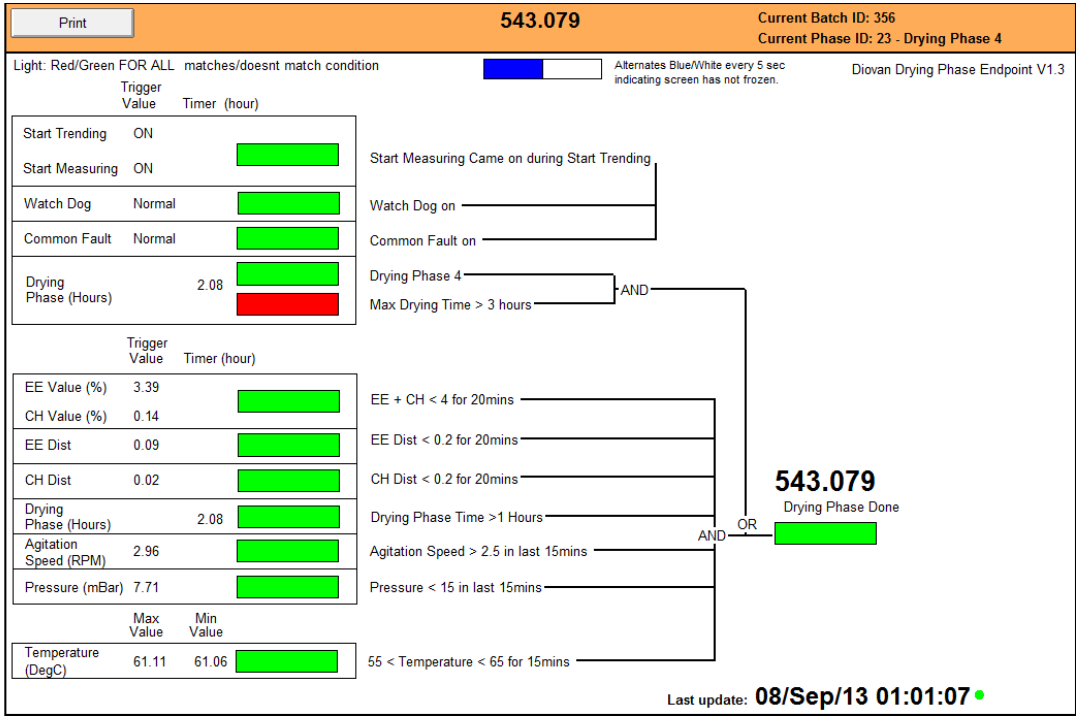

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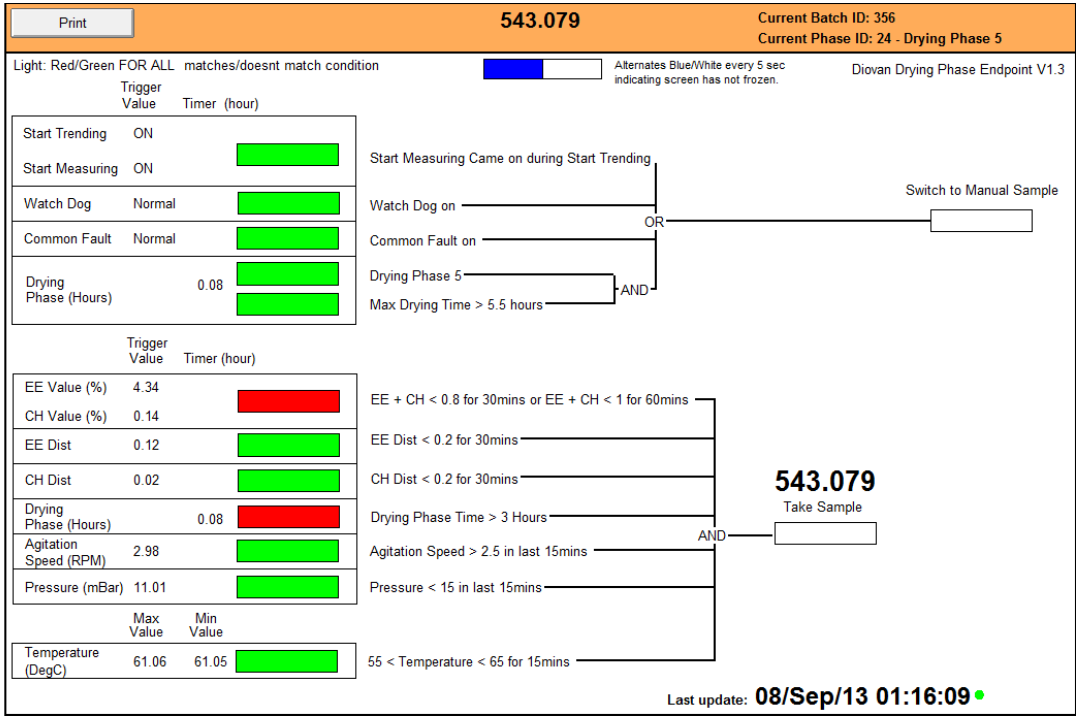

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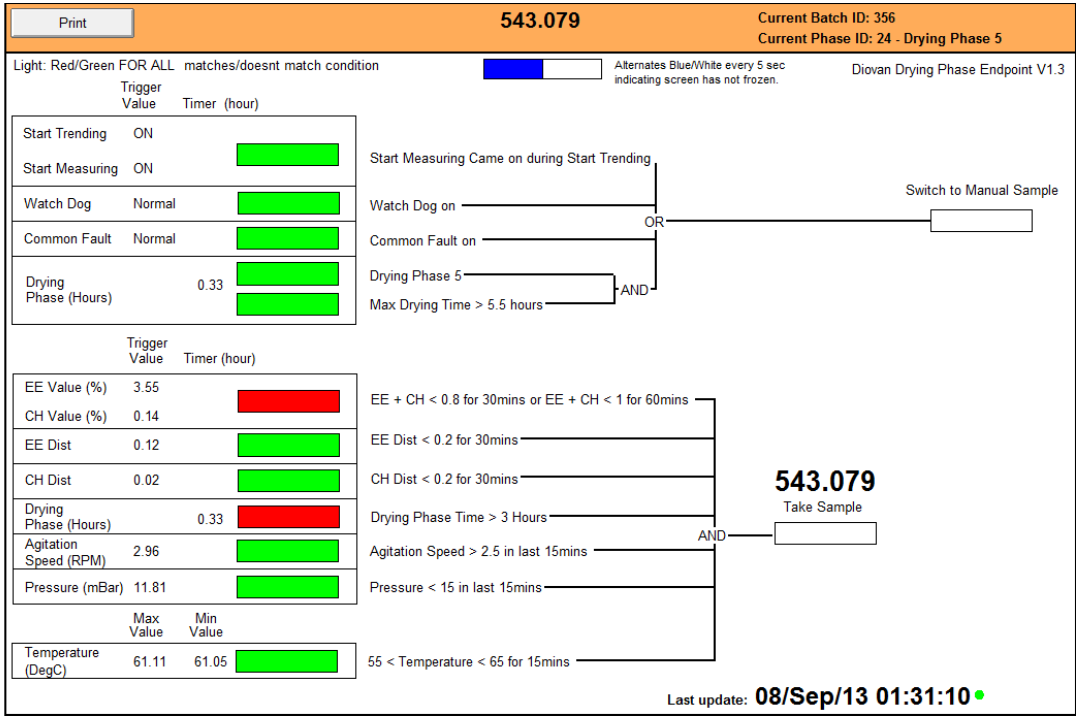

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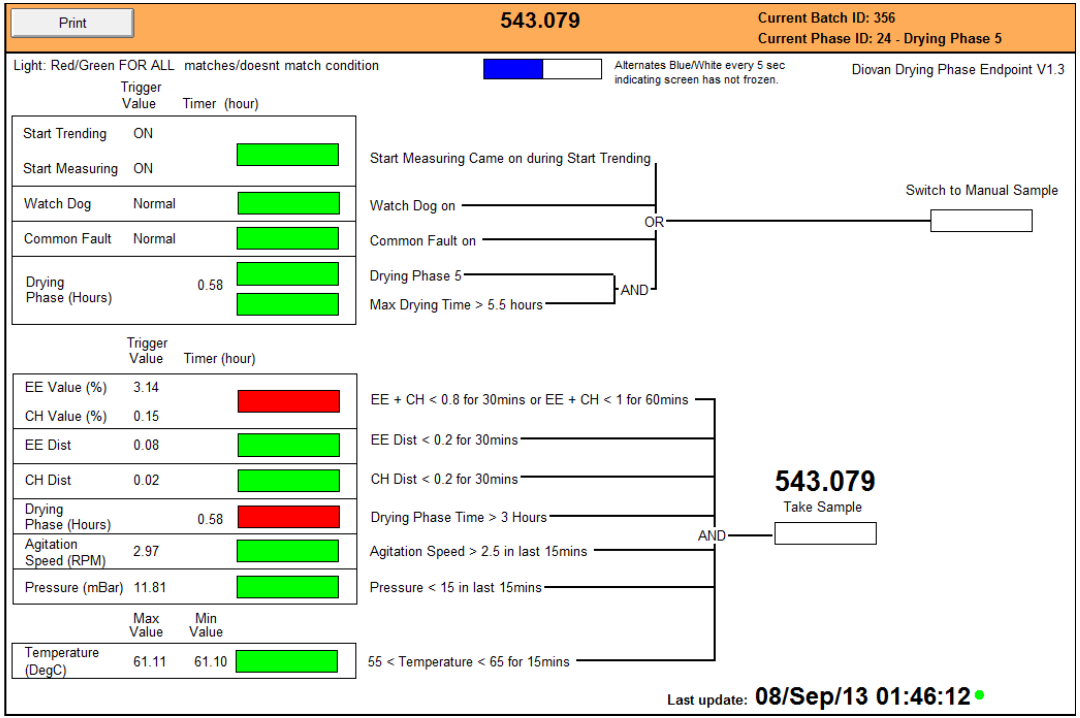

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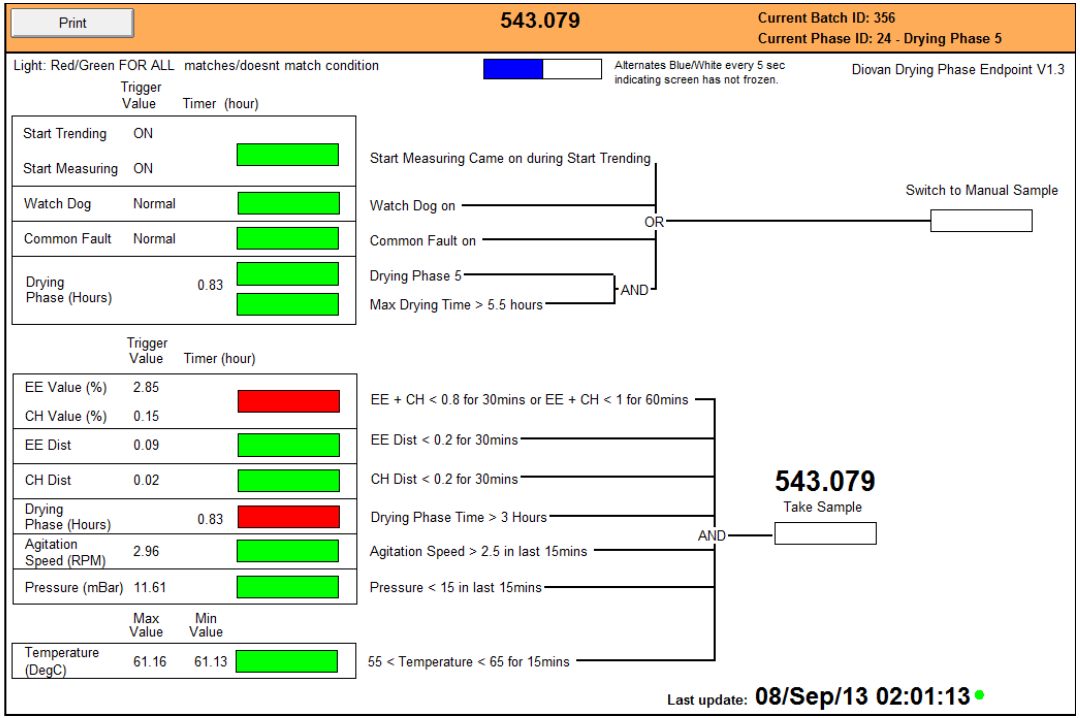

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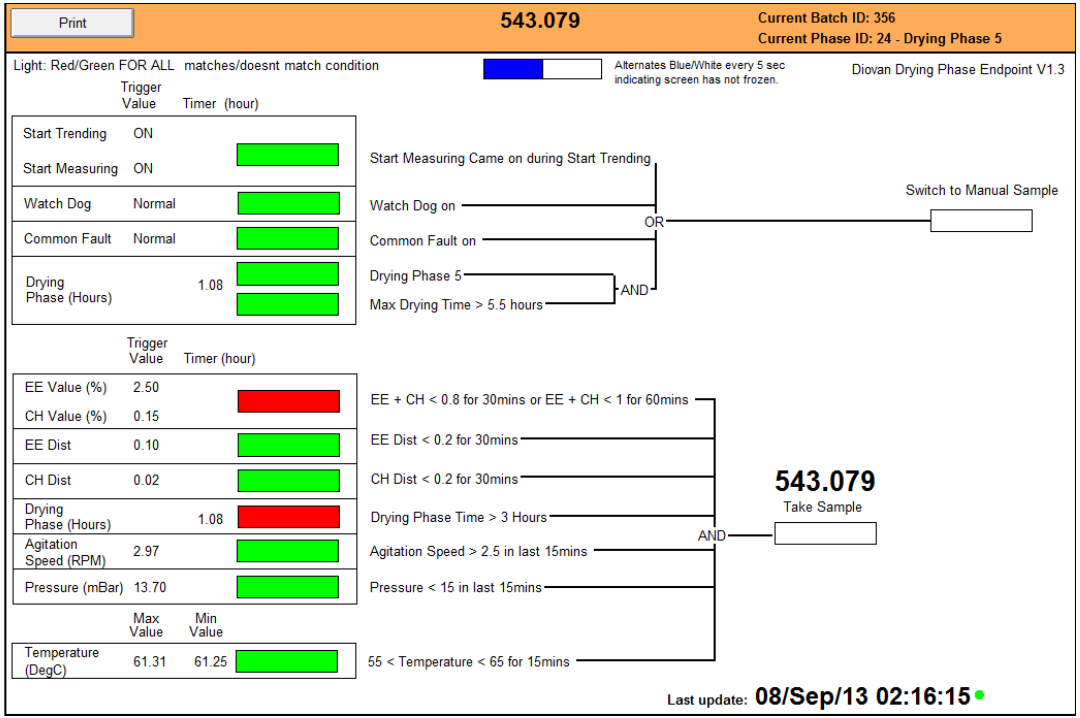

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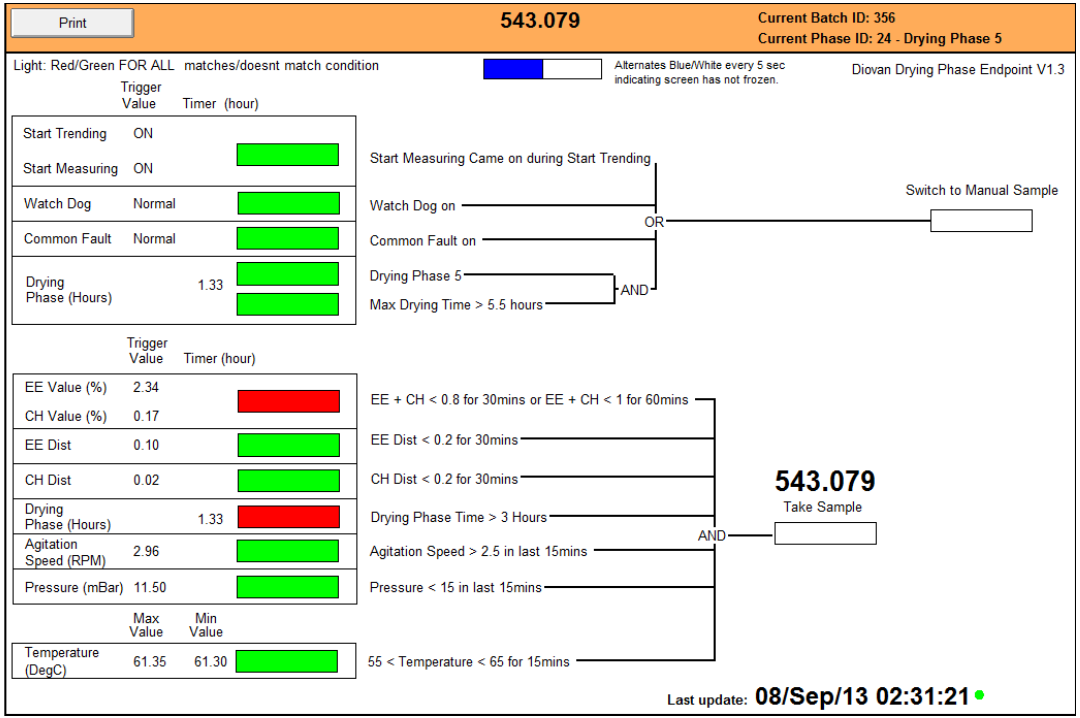

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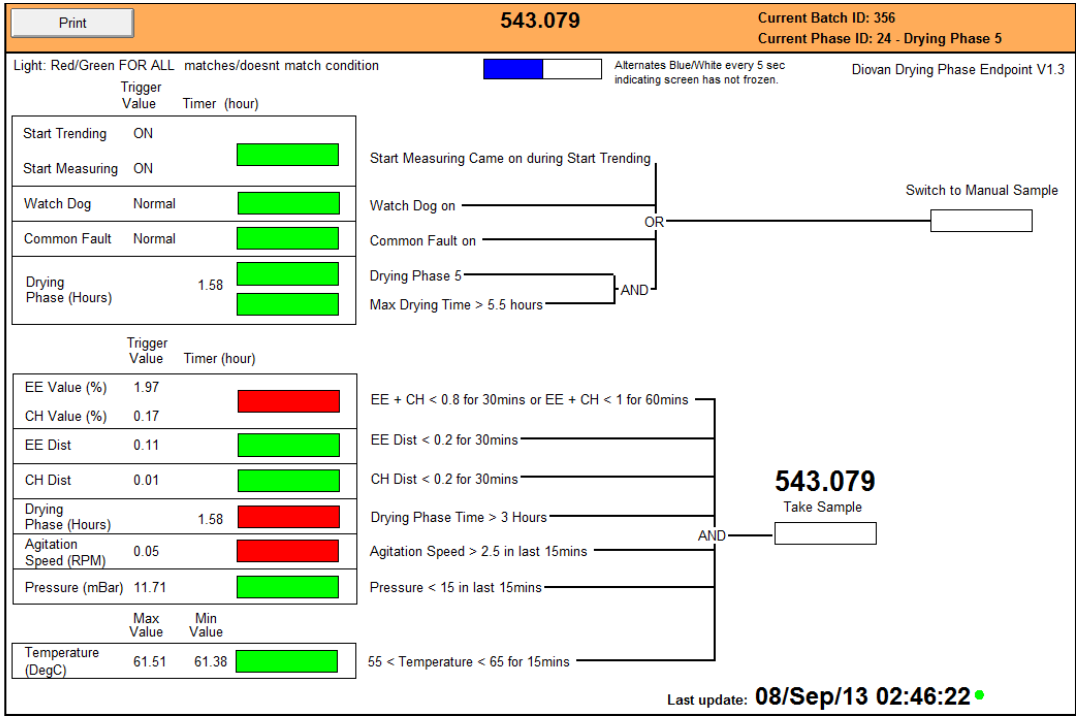

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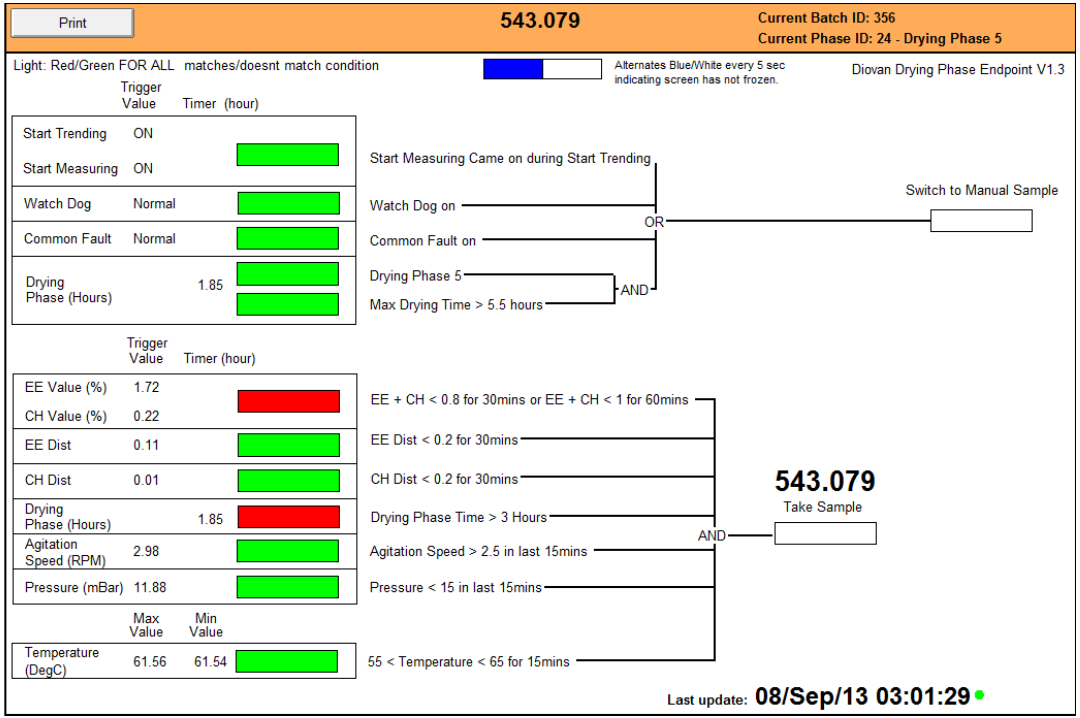

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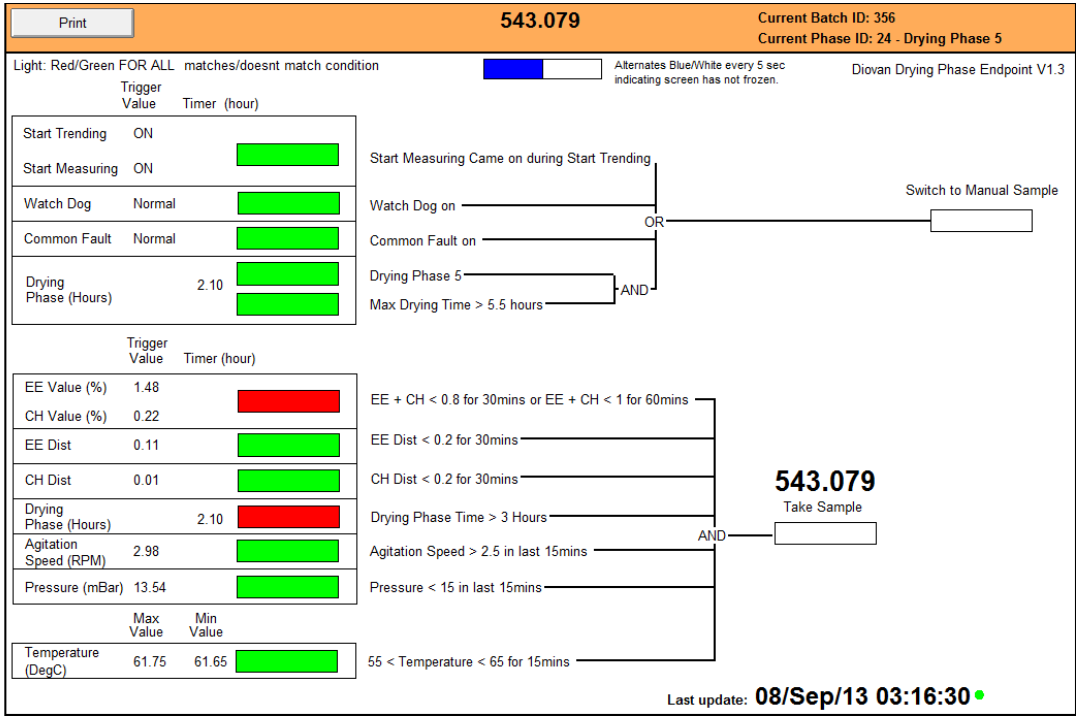

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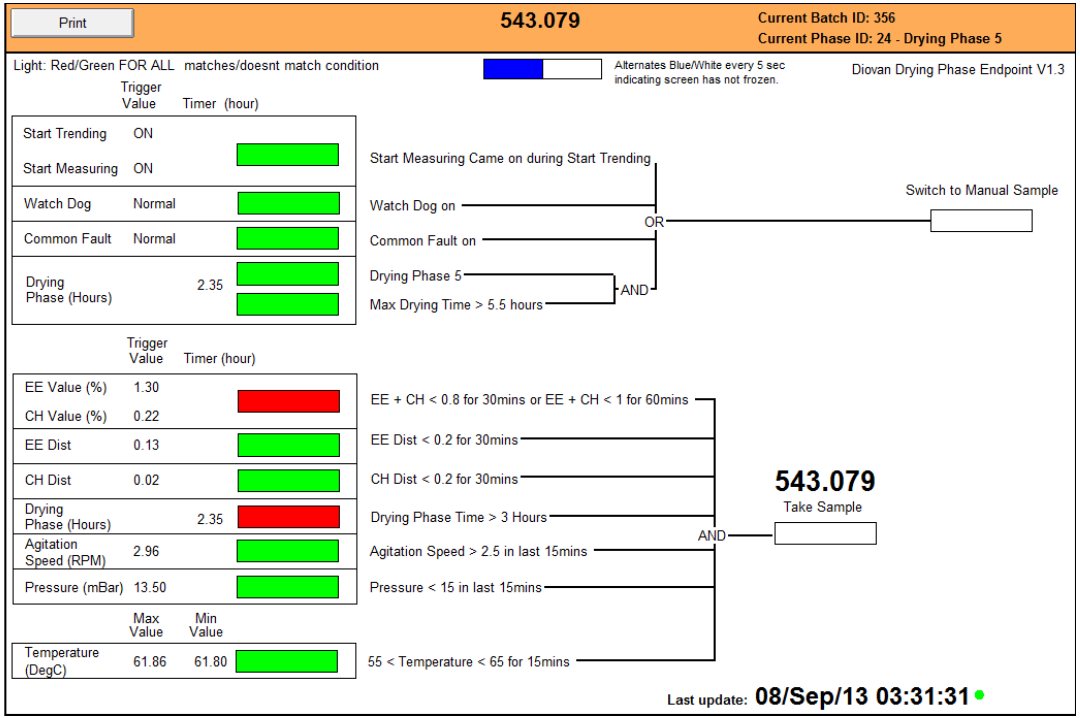

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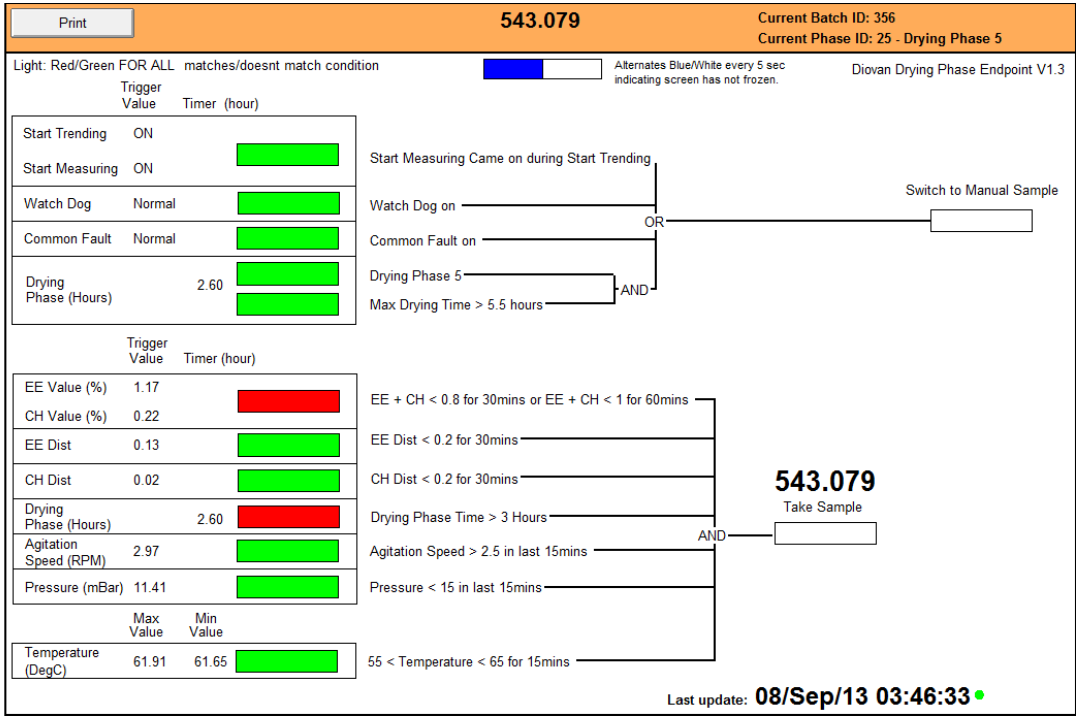

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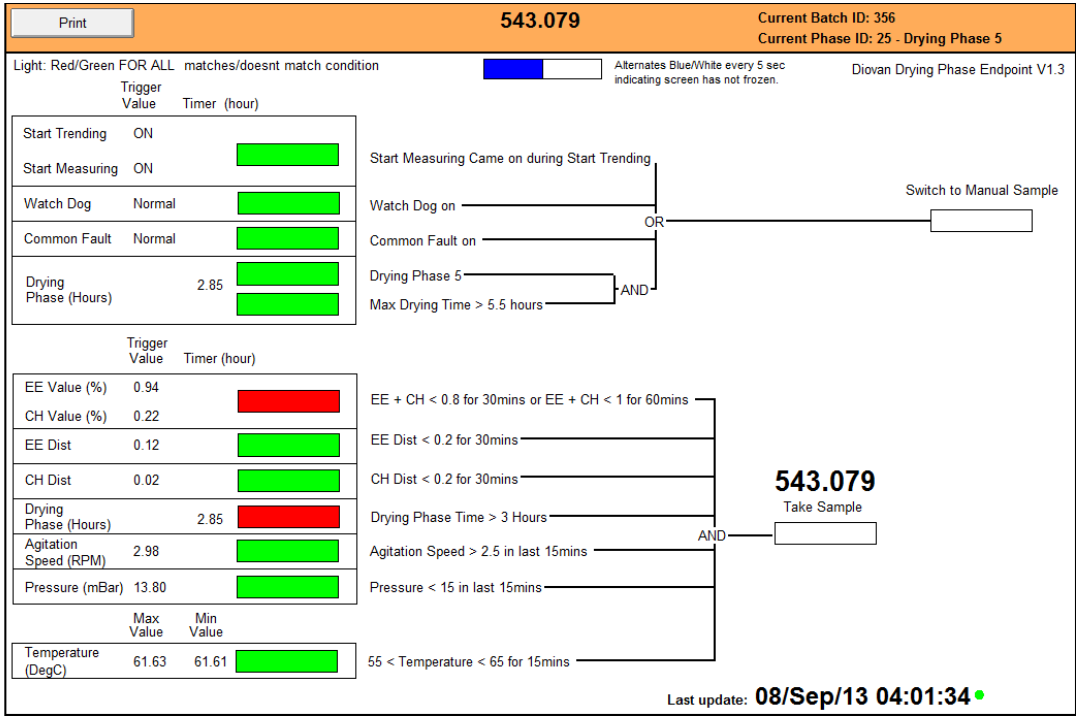

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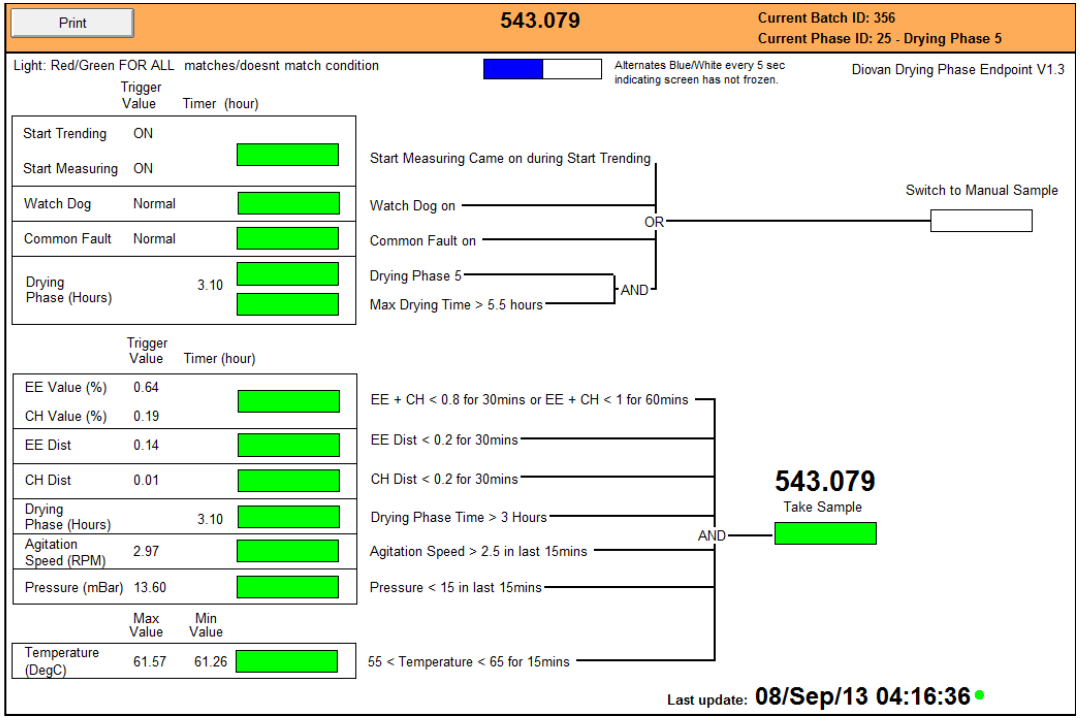

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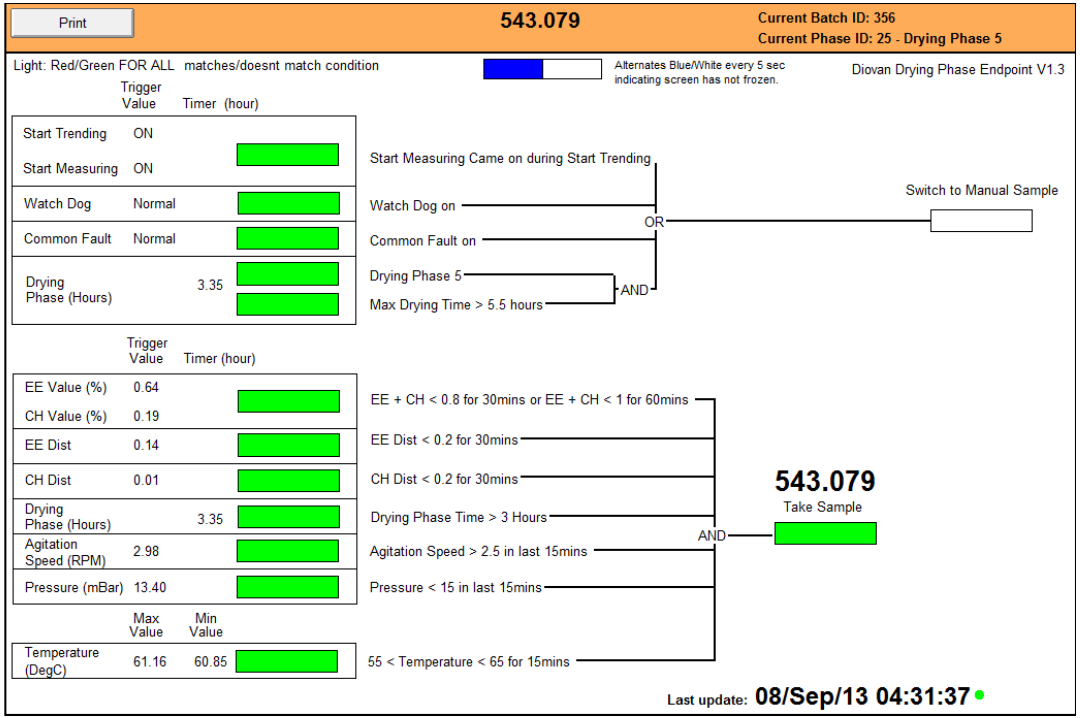

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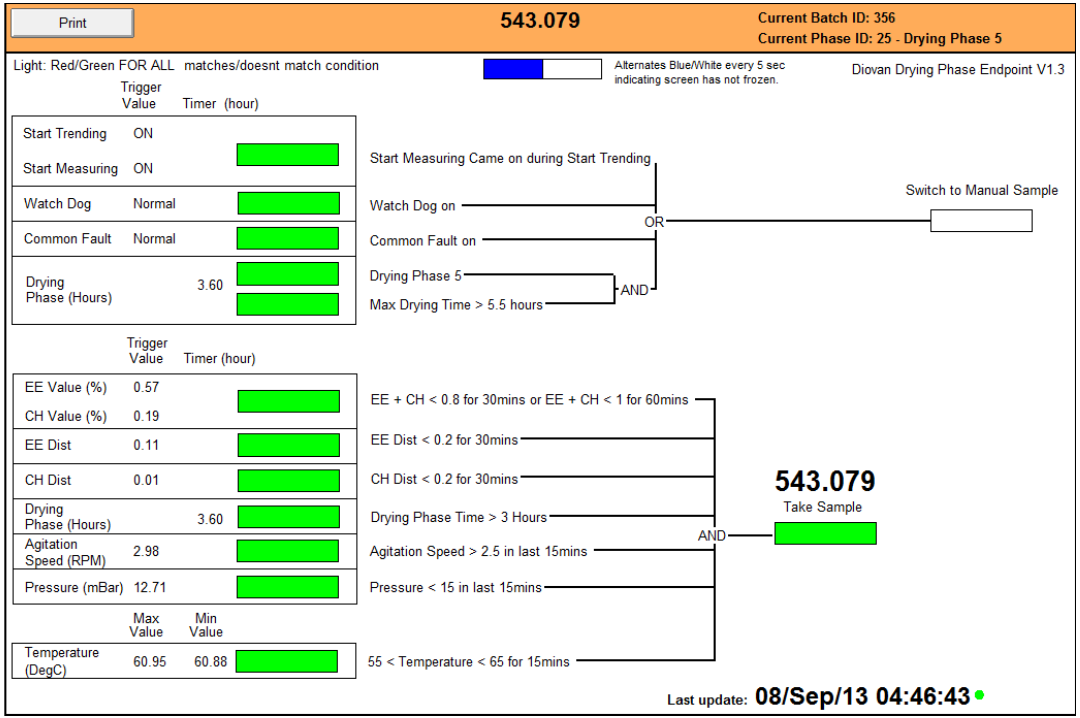

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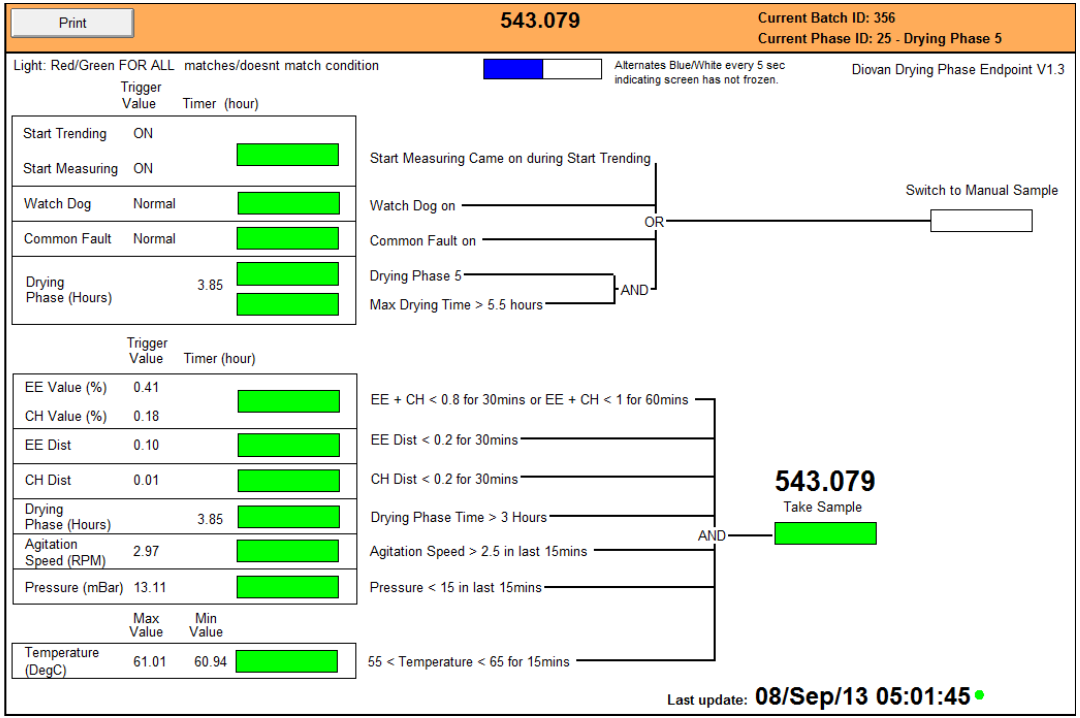

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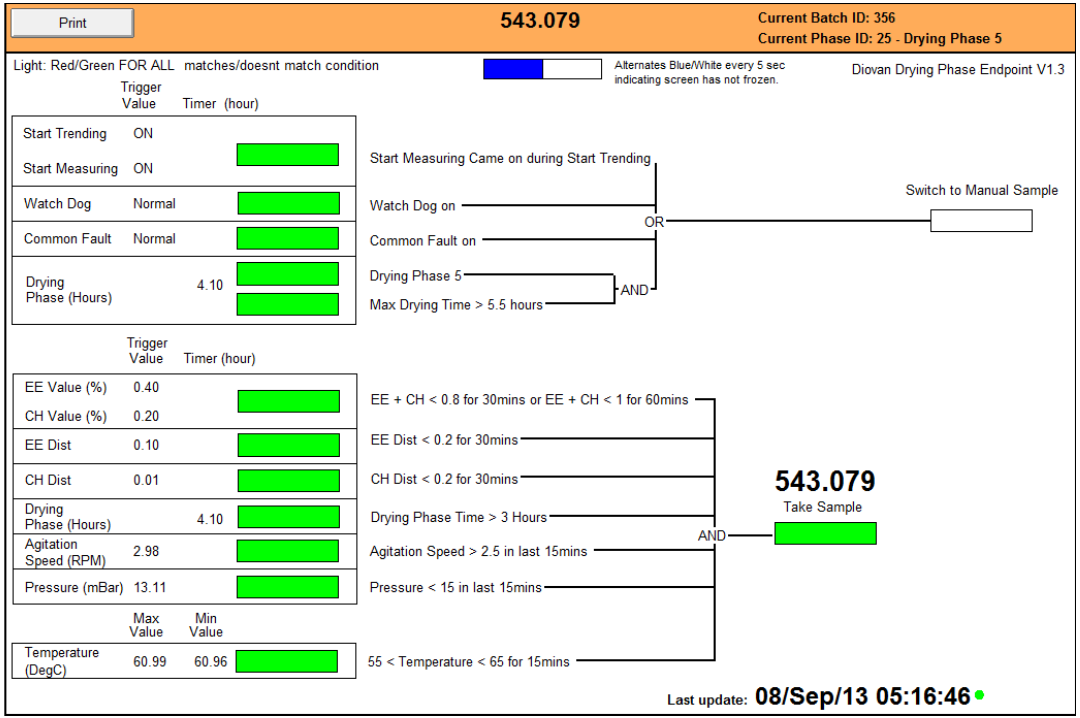

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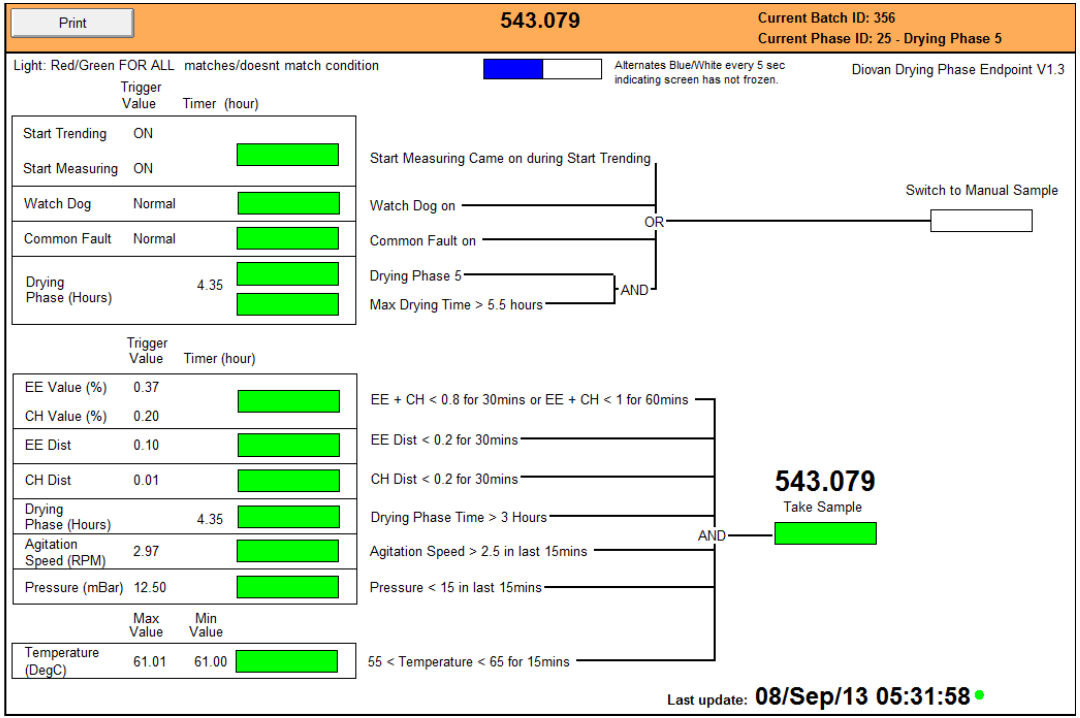

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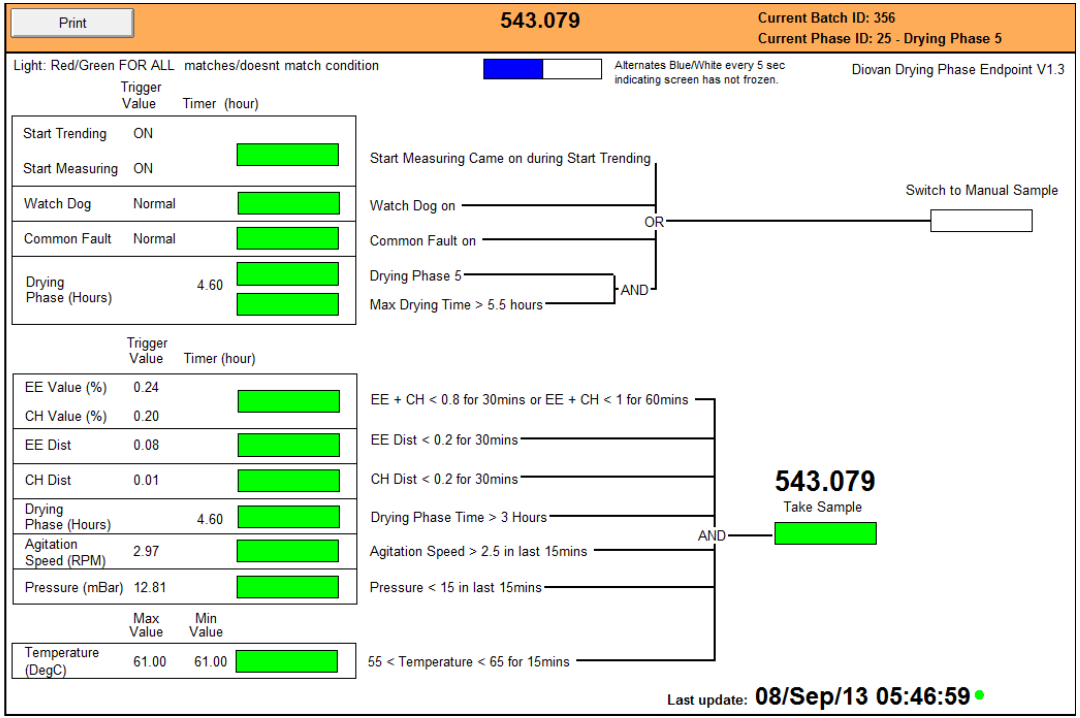

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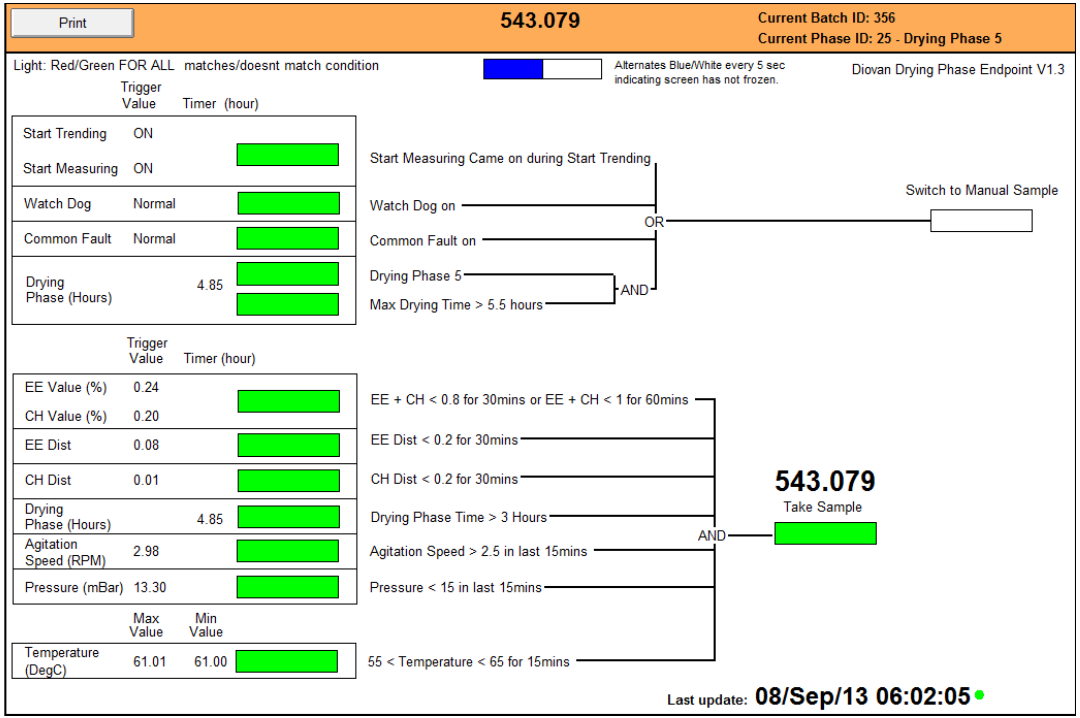

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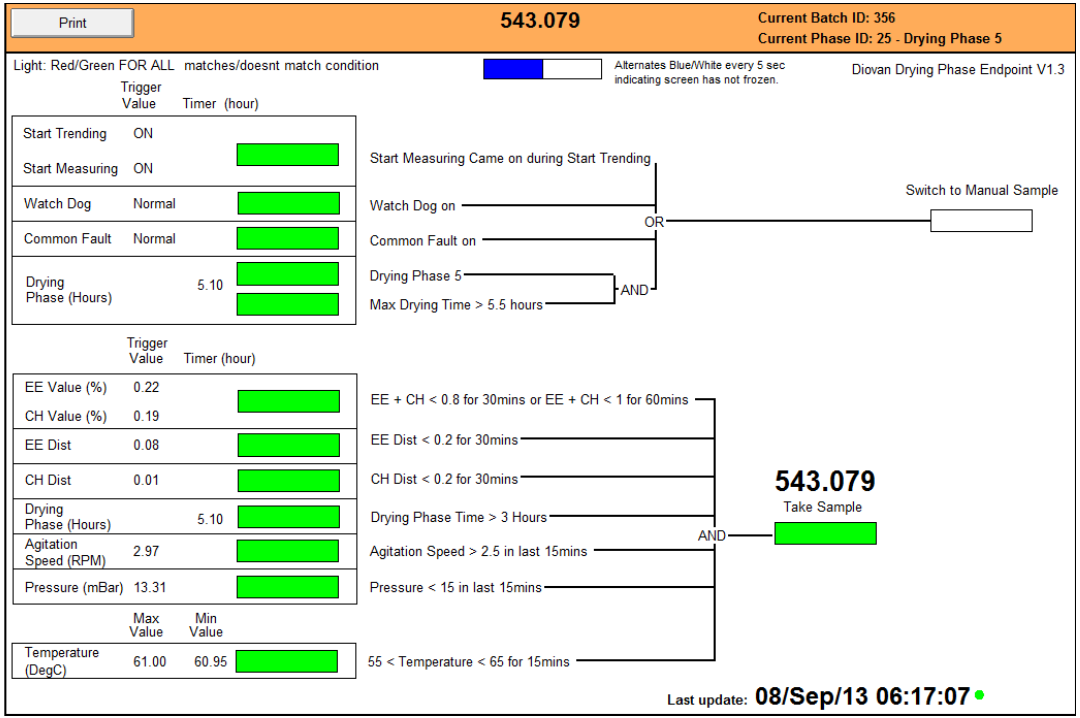

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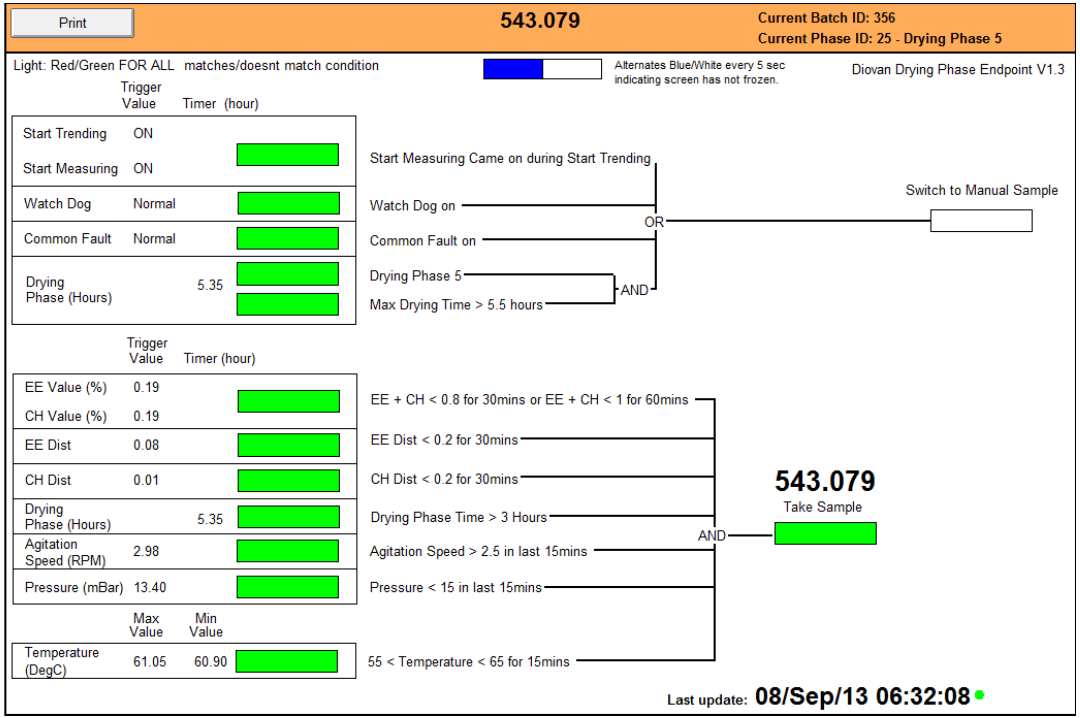

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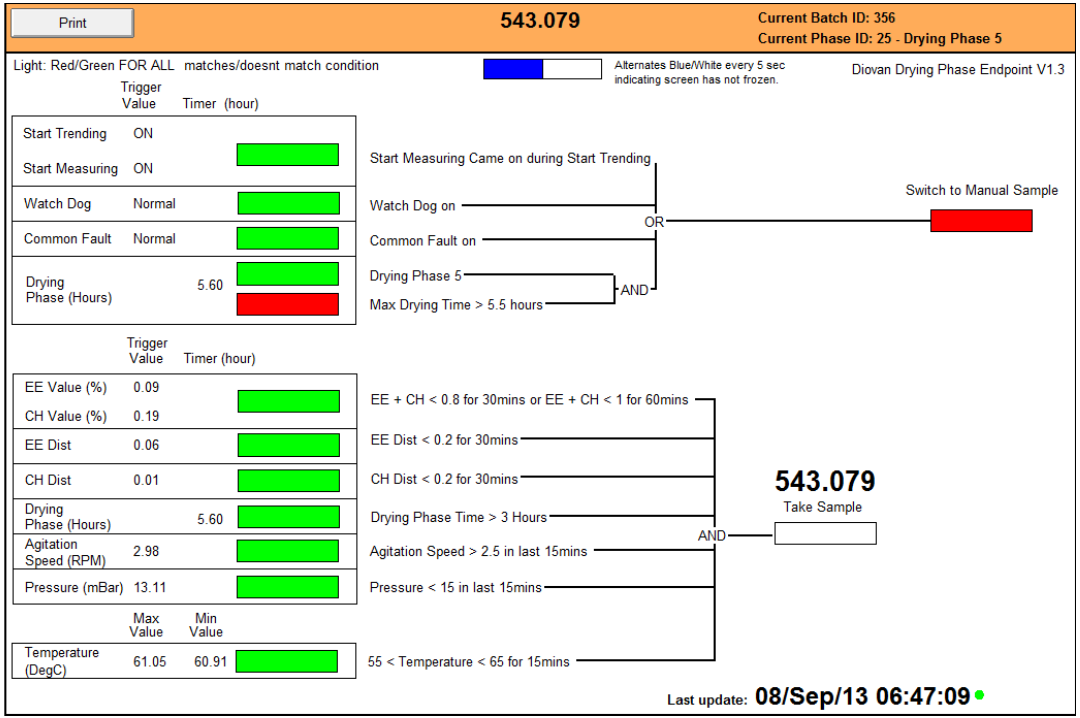

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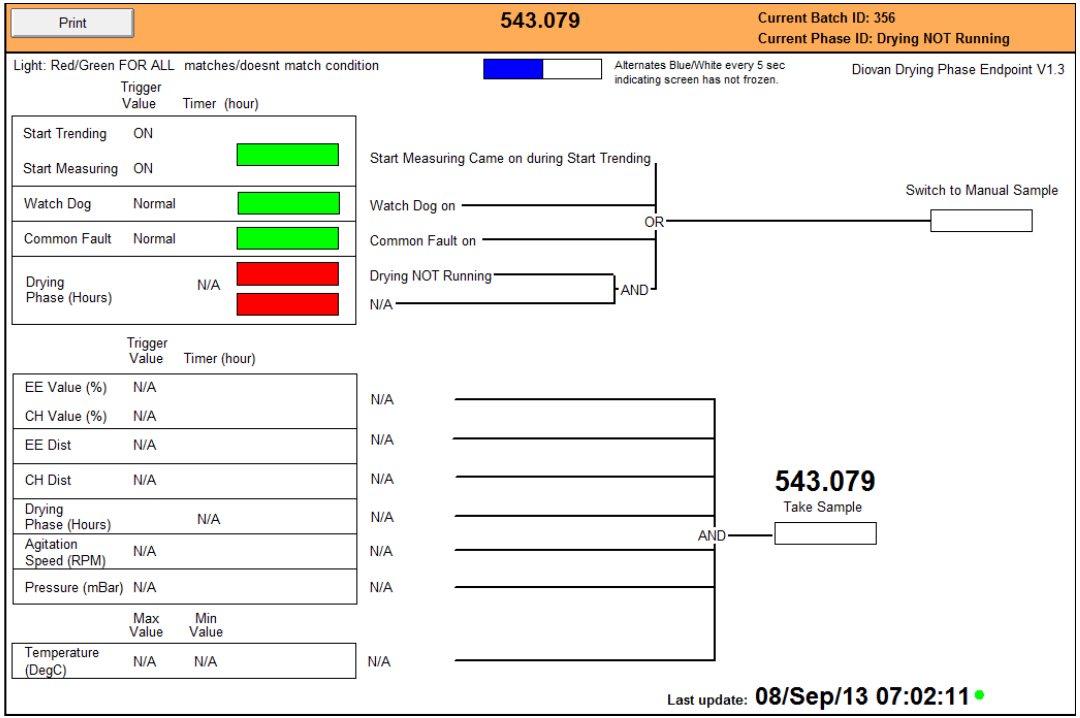

OSIsoft PI System Supporting Process decisions – *Next Steps*

- Quality alarming via the PI System
  - No process control
  - Key enabler for CPV and EBR

Seamus McGrath

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Head of Automation and IT

Novartis Ringaskiddy Limited

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