

# ACTA MALAYSIA

AI · IoT · AIoT · IIoT

CASE STUDY ONE-PAGER

2 solid-dose lines · clean utilities · 8 months  
GMP PHARMACEUTICAL PLANT, SELANGOR

## Live OEE and critical utilities on a validated shop floor

IIoT on compression, blister and cartoning lines plus clean utilities - HVAC, purified water and compressed air - gave production and QA a single shift view of OEE, batch context and excursion risk without touching validated systems.

|                 |                    |                 |                         |
|-----------------|--------------------|-----------------|-------------------------|
| <b>+7.0 pts</b> | <b>-30%</b>        | <b>-17%</b>     | <b>&lt;3 min</b>        |
| OEE improvement | Utility excursions | Changeover time | Excursion alert latency |

### WHAT WE DEPLOYED

- Non-invasive machine-state sensing on compression, blister and cartoning with GMP audit trail
- OPC UA and validated CSV gateways where MES and packaging PLCs were available
- IoT monitoring for HVAC differentials, WFI loop temperature and compressed-air dew point
- Shift OEE dashboard with batch ID, downtime codes and utility excursion alerts to QA

### WHAT CHANGED

- Production and QA review the same live OEE and utility picture at every shift handover
- Batch release discussions reference timestamped line and utility data, not reconstructed logs
- Changeover playbook updated from measured micro-stoppages on blister and cartoning

### STARTING POINT

OEE was calculated weekly from batch records and manual line logs. Cleanroom pressure and WFI temperature excursions were discovered during QA review, hours after the event. Changeover losses on blister lines were invisible until month-end.

"We finally see line performance and clean utilities in the same place - before QA finds it in a review."

Head of Manufacturing, Pharma

Client names are withheld under commercial confidentiality; figures are drawn from post-deployment reviews agreed with each client.  
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