Electronic board production process knowledge extraction for global optimization

Le Toan Duong, Louise Travé-Massuyès, Audine Subias, Nathalie Barbosa Roa

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Electronic board production process knowledge extraction for global optimization

Le Toan Duong (PhD)

Assess product quality from the analysis of event logs
Optimize the production process to reduce production cost and improve product quality

Global penalty index of product $x_i$

$$p_g(x_i) = \sum_{k=1}^{n} \gamma_k \times (1 \times p_b(b_k) + (1 - \lambda) \times p_s(b_k))$$

$$\lambda, \gamma \in [0, 1], \sum_{k=1}^{n} \gamma_k = 1$$

Penalty index of a batch $b_j$ of phase $\phi_i$

$$p_b(b_j) = \sum_{k=1}^{n} \hat{p}_k \times \gamma_k$$

Data source: event logs
Source: MES

Parameter tuning (e.g. penalties)
Work-in-progress (WIP) management
WIP prediction models