

Erratum to “An efficient approach for online diagnosis of discrete event systems”

This brief note corrects a minor mistake and a typo in [1].

In particular, Proposition 1 and the corresponding proof correctly read as follows.

Proposition 1: Let $s \in \Psi(t_{f_i})$, if there exists $q \in L/s$, such that

$$\min_{\epsilon \in \Sigma(N, \mu)} \epsilon(t_{f_i}) > 0,$$

with $\mu_0[z]\mu$, and $z = Pr(sq)$, then t_{f_i} is diagnosable.

Proof: Consider $s \in \Psi(t_{f_i})$ and suppose that there exists $q \in L/s$ such that

$$\min_{\epsilon \in \Sigma(N, \mu)} \epsilon(t_{f_i}) = 0,$$

Now suppose, *ad absurdum*, that t_{f_i} is not diagnosable, then it exists at least one unobservable explanation $\epsilon' \in \Sigma(N, \mu)$ such that $\epsilon'(t_{f_i}) = 0$, hence

$$\min_{\epsilon \in \Sigma(N, \mu)} \epsilon(t_{f_i}) = 0,$$

which contradicts the hypothesis. ■

Furthermore, due to an error during the proof reading process, conditions **1a)** and **1b)** in Proposition 3 correctly read as follows

1a) $\mu \not\equiv \mathbf{0}$ and $|\Sigma(N, \mu)| = |\Sigma_f(N, \mu, t_f)| > 0 \Rightarrow t_f$ has occurred;

1b) $\mu \not\equiv \mathbf{0}$ and $\min_{\epsilon \in \Sigma(N, \mu)} \epsilon(t_f) \neq 0 \Rightarrow t_f$ has occurred;

Finally, condition **1c)** in Proposition 4 reads

1c) $\mu|_{P^*(t_f)} \not\equiv \mathbf{0}$ and $\min_{\epsilon' \in \Sigma(\mathcal{N}^*(t_f), \mu|_{P^*(t_f)})} \epsilon'(t_f) \neq 0 \Rightarrow t_f$ has occurred

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REFERENCES

- [1] F. Basile, P. Chiacchio, G. De Tommasi, “An efficient approach for online diagnosis of discrete event systems,” *IEEE Trans Automat. Control*, vol. 54, no. 4, pp. 748–759, Apr. 2009.