



20th World Congress of the International Federation of Automatic Control

9-14 July 2017, Toulouse, France

<http://www.ifac2017.org/>

Open Invited Track on Diagnosis Techniques on Discrete Event Systems

Organisers:

Mohamed GHAZEL

IFSTTAR, France

mohamed.ghazel@ifsttar.fr

Dimitri LEFEBVRE

University Lehavre, France

dimitri.lefebvre@univ-lehavre.fr

Shigemasa TAKAI

Osaka University, Japan

takai@eei.eng.osaka-u.ac.jp

Abstract: This open invited track aims to bring together researchers working on the diagnosis of discrete event systems. The track offers an opportunity to present the recent results and applications regarding model-based diagnosis techniques with various related issues: diagnosability analysis, online diagnosis, state estimation, etc.

IFAC technical committee for evaluation: TC1.3 (optionally TC 6.4)

Detailed description:

Fault diagnosis on discrete event systems (DESS) has received a lot of attention in both industry and academia during the last two decades. In particular, an increasing amount of work has been devoted to fault diagnosis, in both Artificial Intelligence (AI) and Control Engineering communities. The existing approaches are based on various types of models, automata, Petri nets and their variants, etc. Different related issues are discussed: diagnosability analysis, k/Δ -diagnosability, online diagnosis, sensor placement, etc. Moreover, several techniques are used to deal with these issues, among which some are based on intermediary models: diagnoser, verifier, twin-plant, others use linear programming, max-plus analysis, chronicles, etc.

This open track aims to bring together researchers working on the diagnosis of discrete event systems. The track offers an opportunity to present the recent results and

applications regarding model-based diagnosis techniques. The track includes the following topics, but not restricted to:

- Diagnosability analysis in untimed, timed or stochastic context
- K/Δ -diagnosability analysis
- Online diagnosis
- Diagnosis tools for DES,
- Sensor placement

Application areas are (but not exclusively):

- Transportation,
- Manufacturing systems
- Embedded systems
- Power transmission systems
- Sensor networks
- ...