

## Using Uppaal for the secure and optimal control of AGV fleets

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Auteur	Arnaud, Yoann [1], Boimond, Jean-Louis [2], Cury, Jos� E.-R. [3], Loiseau, Jean-Jacques [4], Martinez, Claude [5]
Pays	Pologne
Ville	Zielona Gora
Mots-cl�s	Automated [6], control [7], optimization [8], timed [9], UPPAAL [10]
R�sum� en anglais	The design and realization of an on line control system for automated guided vehicles (AGV) is addressed. A synthesis method is proposed based on the use of the model checking tool for timed automata Uppaal. This system has to route the vehicles while ensuring the system safeness, a good coordination between vehicles and the optimization of performance criteria. This problem is like synthesizing a Ramadge and Wonham supervisor combined with routing and optimizing functions, that is an ongoing problem within the supervisory control theory. The proposed concepts are validated through a software tool suite based on Uppaal in order to generate optimal traces and interact with an AGV system emulated with Arena.
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