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Autore	Moutinho Filipe de Carvalho
Titolo	Distributed Embedded Controller Development with Petri Nets [[electronic resource]] : Application to Globally-Asynchronous Locally-Synchronous Systems / / by Filipe de Carvalho Moutinho, Luís Filipe Santos Gomes
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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction -- Related work -- Development of distributed embedded controllers -- Application Example -- Conclusions and future work.
Sommario/riassunto	This book describes a model-based development approach for globally-asynchronous locally-synchronous distributed embedded controllers. This approach uses Petri nets as modeling formalism to create platform and network independent models supporting the use of design automation tools. To support this development approach, the Petri nets class in use is extended with time-domains and asynchronous-channels. The authors' approach uses models not only providing a better understanding of the distributed controller and improving the communication among the stakeholders, but also to be ready to support the entire lifecycle, including the simulation, the verification (using model-checking tools), the implementation (relying

	on automatic code generators), and the deployment of the distributed controller into specific platforms. Uses a graphical and intuitive modeling formalism supported by design automation tools; Enables verification, ensuring that the distributed controller was correctly specified; Provides flexibility in the implementation and maintenance phases to achieve desired constraints (high performance, low power consumption, reduced costs), enabling porting to different platforms using different communication nodes, without changing the underlying behavioral model.