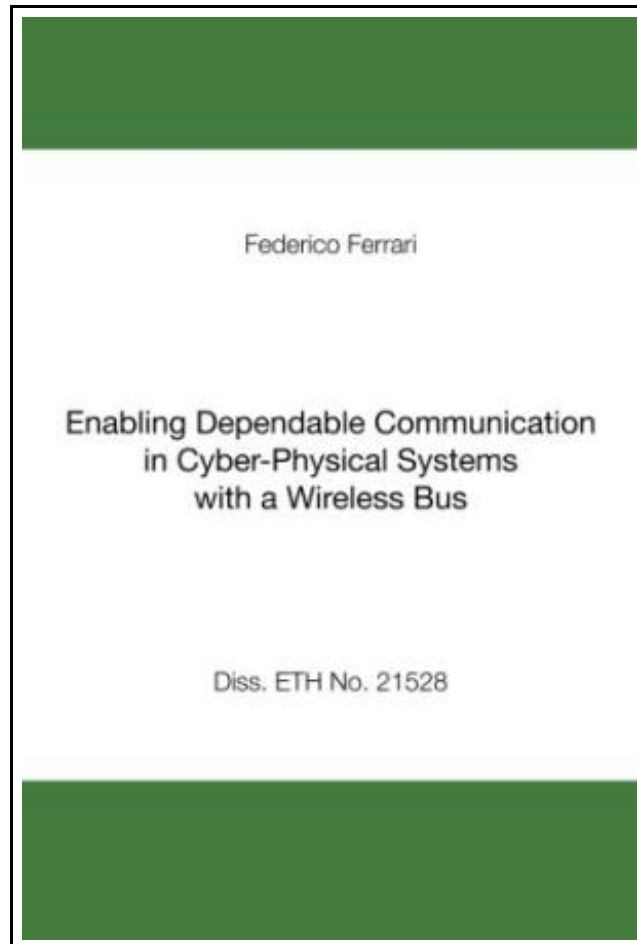


Enabling Dependable Communication in Cyber-Physical Systems with a Wireless Bus



Filesize: 6.39 MB

Reviews

Merely no terms to spell out. It really is rally exciting throgh reading through period. Your daily life period is going to be enhance as soon as you complete looking over this ebook.

(Yvette Marquardt)

ENABLING DEPENDABLE COMMUNICATION IN CYBER-PHYSICAL SYSTEMS WITH A WIRELESS BUS

[DOWNLOAD](#)

Createspace, United States, 2015. Paperback. Book Condition: New. 229 x 152 mm. Language: English . Brand New Book ***** Print on Demand *****.Cyber-physical systems (CPSs) are physical and engineered systems believed to radically transform how we interact with the physical world. By tightly integrating computation, low-power wireless communication, and physical processes, these systems realize safety-critical control loops-with physical processes affecting computation and vice versa-in scenarios where traditional systems are hardly applicable. Potential CPS applications include healthcare, factory automation, and smart structures. The safety-critical nature of most CPS applications demands highly dependable system operation. However, it is currently not possible to apply to cyber-physical systems established concepts for the design and validation of dependable distributed systems. These concepts require guarantees (e.g., on message delivery orderings) that existing CPS communication protocols do not provide. It is indeed extremely challenging to guarantee message delivery in low-power wireless networks, due to, for example, severe computation and memory constraints of typical CPS embedded devices, multi-hop wireless communication, and the need of satisfying also requirements on energy efficiency. State-of-the-art solutions try to overcome these challenges by involving in the exchange of messages as few nodes as possible, but they typically operate only in a best-effort manner. By contrast, we conjecture in this thesis that it is possible to enable dependable yet efficient communication in cyber-physical systems by employing a wireless bus-a time-triggered communication infrastructure where, similar to protocols for (wired) safety-critical embedded systems, nodes are time-synchronized and communicate as if they were connected by a shared bus. In particular, we implement three main building blocks contributing towards a dependable wireless bus: We design Glossy, a flooding architecture that provides fast and highly reliable one-to-all communication in multi-hop low-power wireless networks, while also accurately time-synchronizing all devices. Glossy exploits synchronous transmissions of the same packet, and does...



[Read Enabling Dependable Communication in Cyber-Physical Systems with a Wireless Bus Online](#)



[Download PDF Enabling Dependable Communication in Cyber-Physical Systems with a Wireless Bus](#)

See Also



Games with Books : 28 of the Best Childrens Books and How to Use Them to Help Your Child Learn - From Preschool to Third Grade

Book Condition: Brand New. Book Condition: Brand New.

[Save ePub »](#)



Index to the Classified Subject Catalogue of the Buffalo Library; The Whole System Being Adopted from the Classification and Subject Index of Mr. Melvil Dewey, with Some Modifications .

Rarebooksclub.com, United States, 2013. Paperback. Book Condition: New. 246 x 189 mm. Language: English . Brand New Book ***** Print on Demand *****.This historic book may have numerous typos and missing text. Purchasers can usually...

[Save ePub »](#)



Games with Books : Twenty-Eight of the Best Childrens Books and How to Use Them to Help Your Child Learn - from Preschool to Third Grade

Book Condition: Brand New. Book Condition: Brand New.

[Save ePub »](#)



Children s Educational Book: Junior Leonardo Da Vinci: An Introduction to the Art, Science and Inventions of This Great Genius. Age 7 8 9 10 Year-Olds. [Us English]

Createspace, United States, 2013. Paperback. Book Condition: New. 254 x 178 mm. Language: English . Brand New Book ***** Print on Demand *****.ABOUT SMART READS for Kids . Love Art, Love Learning Welcome. Designed to...

[Save ePub »](#)



Children s Educational Book Junior Leonardo Da Vinci : An Introduction to the Art, Science and Inventions of This Great Genius Age 7 8 9 10 Year-Olds. [British English]

Createspace, United States, 2013. Paperback. Book Condition: New. 248 x 170 mm. Language: English . Brand New Book ***** Print on Demand *****.ABOUT SMART READS for Kids . Love Art, Love Learning Welcome. Designed to...

[Save ePub »](#)