Real-Time Android

RTAndroid platform makes real-time Android possible. With its ability to serve real-time requests, RTAndroid enlarges the field of application of mobile Android devices to time-critical domains. They could be used for in-field monitoring in industrial plants or as an integrated automation platform. This project evaluates the applicability of a RTAndroid-based solution in scenarios typical for programmable logic controllers (PLCs). Continuous improvements in the portability, usability and computational power of modern tablet PCs allow the development of new environments for working with PLC-common programming languages. Given the fundamental real-time support, RTAndroid can be used as a platform for an all-in-one solution including development, simulation and execution of typical PLC programs, as well as the communication to external hardware.

Details

More information about the project can be found here: Real-Time Android

Contacts

Dr. rer. nat. Igor Kalkov
David Thönnessen, M.Sc. RWTH

Publications

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PDFBIB
Kalkov, I., "A real-time capable, open-source-based platform for off-the-shelf embedded devices", PhD Thesis, Aachen, 2017.

A real-time capable, open-source-based platform for off-the-shelf embedded devices

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    author = { Kalkov, Igor },
    othercontributors = { Kowalewski, Stefan and A{\ss}mann, Uwe },
    title = { A real-time capable, open-source-based platform for
        off-the-shelf embedded devices },
    publisher = { RWTH Aachen University, Department of Computer
Science },
    school = { RWTH Aachen University },
    pages = { 1 Online-Ressource (xx, 114 Seiten) : Illustrationen,
        Diagramme },
    series = { Aachener Informatik-Berichte },
    year = { 2017 },
    address = { Aachen },
    doi = { 10.18154/RWTH-2018-222005 },
    typ = { PUB:(DE-HGF)3 },
    reportid = { RWTH-2018-222005 },
    cin = { 122810 / 120000 },
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http://publications.rwth-aachen.de/record/719343/files/719343.pdf },
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    author = { Kalkov, Igor and Gurghian, Alexandru and Kowalewski,
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    title = { Explicit prioritization of parallel Intent broadcasts in
        real-time Android },
    booktitle = { Concurrency and computation },
    publisher = { Wiley },
    volume = { 29 },
    number = { 22 },
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    address = { Chichester },
    issn = { 1532-0626 },
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        Real-Time and Embedded systems, Niagara Falls, NY (USA),
        2014-10-13 - 2014-10-14 },
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    typ = { PUB:(DE-HGF)16 },
    reportid = { RWTH-2017-09553 },
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    author = { Kalkov, Igor and Gurghian, Alexandru and Kowalewski,
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    title = { Priority Inheritance during Remote Procedure Calls in
        Real-Time Android using Extended Binder Framework },
    booktitle = { Proceedings of the 13th International Workshop on
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        Technologies for Real-time and Embedded Systems },
    publisher = { ACM },
    pages = { 5, 10 Seiten },
    series = { ACM Other conferences },
    year = { 2015 },
    address = { New York, NY },
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        Real-time and Embedded Systems, Paris (France), 2015-10-07 -
        2015-10-08 },
    doi = { 10.1145/2822304.2822311 },
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    reportid = { RWTH-2016-03747 },
    cin = { 122810 / 120000 },
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    author = { Kowalewski, Stefan and Kalkov, Igor and Obster, Mathias
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    journal = { IEE - Elektrische Automatisierung + Antriebstechnik },
    publisher = { IEE },
    pages = { 58-61 },
    year = { 2015 },
    issn = { 1434-2898 },
    typ = { PUB:(DE-HGF)16 },
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    title = { An Approach for Using Mobile Devices In Industrial
        Safety-Critical Embedded Systems },
    booktitle = { Mobile Computing, Applications, and Services : 5th
        International Conference, MobiCase 2013, Paris, France,
        November 7-8, 2013, Revised Selected Papers },
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    doi = { 10.1007/978-3-319-05452-0_27 },
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    cin = { 120000 / 122810 },
    url = { http://publications.rwth-aachen.de/record/225590 },
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        2014-09-16 - 2014-09-19 },
    doi = { 10.1109/ETFA.2014.7005218 },
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    address = { New York, NY },
    organization = { Java-Technologien f{\"u}r Echtzeit- und
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    doi = { 10.1145/2512989.2512999 },
    typ = { PUB:(DE-HGF)8 },
    reportid = { RWTH-CONV-202515 },
    cin = { 120000 / 122810 },
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    author = { Kalkov, Igor and Franke, Dominik and Schommer, John F.
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        Kowalewski, Stefan },
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    doi = { 10.1145/2388936.2388955 },
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