

Communication and validation of metrological smart data in IoT-networks

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ABSTRACT

An Internet of Things-network (IoT-network) allows for the communication of data both within the network and to data hubs. However, the usefulness of the data depends on its ability to be interpreted correctly. For metrology data, effective use of the data is only possible if the numerical value, associated unit and uncertainty, expressed in a standard format, are also available. In order to develop, provide and distribute a formal framework for the transmission of metrology data on the basis of the International System of Units, European project EMPIR 17IND02 SmartCom was agreed between the European Commission and the European Association of National Metrology Institutes (Euramet). The SmartCom project aims to provide the methodological and technical foundation for the unambiguous, universal, safe and uniform communication of metrological smart data in the IoT and Industry 4.0. The project will increase the industrial capabilities and the provision of regulations for data exchange in the IoT. It will also assist countries within the European Union (EU) and those with an association agreement with the EU in developing products that are able to communicate in IoT environments worldwide. In addition to describing the general ideas and aims of the project, this article presents the research results achieved in the first midterm period.

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Komunikacija in validacija meroslovnih pametnih podatkov v IoT-omrežjih

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POVZETEK

Omrežje Internet of Things (IoT) omogoča komunikacijo podatkov znotraj omrežja in do podatkovnih vozlišč. Vendar pa je uporabnost podatkov odvisna od zmožnosti pravilne razlage le-teh. Za meroslovne podatke je učinkovita uporaba podatkov možna le, če so na voljo tudi številčna vrednost, pridružena enota in negotovost, izraženi v standardni obliki. Za razvoj, zagotavljanje in distribucijo formalnega okvira za prenos meroslovnih podatkov na podlagi Mednarodnega sistema enot je bil med Evropsko komisijo in Evropskim združenjem nacionalnih meroslovnih inštitutov (Euramet) dogovorjen evropski projekt EMPIR 17IND02 SmartCom. Namen projekta SmartCom je zagotoviti metodološko-tehnične temelje za nedvoumno, univerzalno, varno in enotno komunikacijo meroslovnih pametnih podatkov v IoT in Industriji 4.0. Projekt bo povečal industrijske zmogljivosti in zagotovil predpise za izmenjavo podatkov v IoT. Prav tako bo pomagal državam znotraj Evropske unije (EU) in državam s pridružitvenim sporazumom z EU pri razvoju izdelkov, ki so sposobni komunicirati v okoljih interneta stvari po vsem svetu. Ta članek poleg opisov splošnih idej in ciljev projekta predstavlja rezultate raziskave, dosežene v prvem vmesnem obdobju.

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PODATKI O ČLANKU

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