

# Estimation of the Throughput of the Channel for Measuring the Distance of Short-Range Radio Engineering Systems

Iryna Svyd

dept. of Microprocessor Technologies  
and Systems  
Kharkiv National University of Radio  
Electronics  
Kharkiv, Ukraine  
iryna.svyd@nure.ua

Oleksandr Romanov

Institute of Telecommunication System  
National Technical University of  
Ukraine "Igor Sikorsky Kyiv  
Polytechnic Institute"  
Kyiv, Ukraine  
a\_i\_romanov@ukr.net

Ivan Obod

dept. of Microprocessor Technologies  
and Systems  
Kharkiv National University of Radio  
Electronics  
Kharkiv, Ukraine  
ivan.obod@nure.ua

Oleksandr Zhuk

Military Institute of  
Telecommunications and Information  
Technologies named after Heroes  
of Kruty  
Kyiv, Ukraine  
radiosenter222@ukr.net

Oleksandr Maltsev

dept. of Microprocessor Technologies  
and Systems  
Kharkiv National University of Radio  
Electronics  
Kharkiv, Ukraine  
aleksandr.maltsev@nure.ua

Oleksii Nesmiian

dept. of Mathematical and Software of  
Automated Control Systems  
Kharkiv National University of Air  
Forces  
Kharkiv, Ukraine  
nesmiyanalexey@gmail.com

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**Abstract**—In the presented work, the relative throughput of both a ground-based range transponder and the entire short-range radio engineering system is estimated under the action in the range channel of the total flow of range request signals. And also considered the requesting signals for unauthorized use of the rangefinder channel transponder by the interested party under the action of chaotic impulse noise flow. The evaluation was carried out on the basis of the representation of the channel for measuring the range of short-range radio engineering systems in the form of a non-synchronous network. We assume that the range request signals are serviced by an open single-channel queuing system with refusing according to the service scheme of the first correctly received range request signal.

**Keywords**—Distance Measuring Equipment (DME), Global Navigation Satellite Systems (GNSS), Alternative Position Navigation and Timing (APNT), GPS, WAM.

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