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Krzysztof Jaskólski

Availability and integrity model of Automatic Identification System (AIS) Information

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P O L I S H N A V A L A C A D E M Y
F A C U L T Y O F N A V I G A T I O N A N D N A V A L A R M A M E N T

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AVAILABILITY AND INTEGRITY MODEL OF AUTOMATIC IDENTIFICATION SYSTEM (AIS) INFORMATION

Doctor's thesis
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ABBREVIATIONS AND SYMBOLS

A	Availability
$A_{exp}(t)$	availability coefficient with the exponential distribution
AIS	Automatic Identification System
ARPA	Automatic Radar Plotting Aid
ASCII	American Standard Code for Information Interchange
BER	Bit Error Ratio
BRG	true bearing
CNIS	Channel Navigation Information Service
CPA	Closest Point of Approach
C_i	cell coverage estimate
CM_{exp}	completeness coefficient with the exponential distribution
COLREG	International Regulations for Preventing Collisions at Sea
DG	Dangerous Goods
DGNSS	Differential Global Navigation Satellite Service
DSC	Digital Selective Calling
E(X)	expected value of lifetime
E(Y)	expected value of failure time
ENC	Electronic Navigation Chart
ETA	Estimated Time of Arrival
FRP	Federal Radionavigation Plan
FSK	Frequency Shift Keying
FTA	Fault Tree Analysis
GLONASS	Globalnaya Navigatsionnaya Sputnikovaya Sistema
GMDSS	Global Maritime Distress and Safety System
HDG	heading
HELCOM	Baltic Marine Environment Protection Commission
HEX	Hexadecimal
HS	Hazardous Supplies
HSC	High Speed Craft
h(i)	number of 'hits' in the i-th cell
IALA	International Association of Marine Aids to Navigation and Lighthouse Authorities
ICM_{exp}	incompleteness coefficient with the exponential distribution
IEC	International Electrotechnical Commission
IMO	International Maritime Organisation
ITDMA	Incremental Time Division Multiple Access
ITU	International Telecommunication Union
LRIT	Long Range Identification and Tracking System
MADSS	Multi-agents Decision Support System
MarSSIES	Maritime Safety & Security Information Exchange System" (Polish acronym SWIBŻ)
MKD	Minimum Keyboard Display
MMSI	Maritime Mobile Service Identity
MOSG	Maritime Regional Unit of the Border Guard Republic of Poland
MRCC	Maritime Rescue Coordination Centre