

SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM (B2)
Advanced Technologies (2)

Author: Mr. Hideki Takenaka

National Institute of Information and Communications Technology (NICT), Japan, take@nict.go.jp

Dr. Morio Toyoshima

National Institute of Information and Communications Technology (NICT), Japan, morio@nict.go.jp

Dr. Yoshihisa Takayama

National Institute of Information and Communications Technology (NICT), Japan, takayama@nict.go.jp

Mr. Yoshisada Koyama

National Institute of Information and Communications Technology (NICT), Japan,
koyama.yoshisada@nict.go.jp

Dr. Maki Akioka

National Institute of Information and Communications Technology (NICT), Japan, akioka@nict.go.jp

Prof. Eiji Okamoto

Japan, okamoto@nitech.ac.jp

Mr. Takuma Kyo

Japan, 23417552@stn.nitech.ac.jp

DEVELOPED OF A TRANSPORT PROTOCOL GROUND-TO-SATELLITE LASER
COMMUNICATIONS BASED ON UDP**Abstract**

Development of a Small Optical TrAnsponder(SOTA) on board a micro-satellite is conducted by the National Institute of Information and Communications Technology (NICT).The project is called the Space Optical Communications Research Advanced Technology Satellite (SOCRATES) project. Ground-to-satellite laser communications due to atmospheric fluctuations.The fading deteriorates communications quality. To cover this problem, SOTA is equipped with UDP-based ground-to-satellite laser communications transport protocol, we called UDP-SOTA, and is enabled to improve communications quality through error correcting. The verification of the error correcting function is one of the experiments. We have been doing the simulation test using the error correcting. In this paper, we introduce the transport protocol UDP-SOTA for ground-to-satellite laser communications and using a hardware atmospheric turbulence simulator which was developed from OICETS experiment data in 2008 will be presented.