

SPACE SYSTEMS SYMPOSIUM (D1)
Space Systems Architectures (4)

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THE OVERVIEW OF ADVANCED SMALL TYPE STANDARD BUS SYSTEM OF NEXTAR AND
ASNARO SATELLITE USING NEXTAR BUS**Abstract**

This paper presents overviews of NEXTAR (NEC NEXT GENERATION STAR) which is an advanced small type standard satellite bus system and ASNARO (Advanced Satellite with New System Architecture for Observation) satellite which is developed by NEC and USEF under a contract of METI; Ministry of Economy, Trade and Industry. NEC are proceeding to develop an advanced small type standard satellite bus based on our technologies which was established by more than 40 years experiences on space system and component development. In our concept, we can obtain a high performance earth observation satellite only by combining NEXTAR with high performance sensor (optical/ SAR /Hyper spectrum, etc.) developed by NEC. To achieve this concept, we developed mechanical, thermal and electrical interfaces between bus and payload to be standardized. Because of these features, NEXTAR is highly adaptive for various missions and can reduce non-recurrent cost and development time. NEXTAR series consists of NEXTAR-100L/300L/500L, etc. corresponding to a size of satellite. ASNARO is advanced small type satellite for earth observation using NEXTAR-300L with high performance optical sensor. ASNARO has an equivalent or higher performance than that in world famous commercial satellite (WorldView-2, GeoEye-1, Pleiades) by smaller size. ASNARO has high performance optical sensor whose resolution(GSD) is less than 0.5m with 10km swath using Time Delay Integration (TDI) method for imaging. This optical sensor is designed as Three Mirror Anastigmatic. And the material of Primary Mirror is New Technology Silicon Carbide Mirror (NTSIC) which has suitable features for a large type mirror of high stiffness (8 times stiffer than glass material), no pores on surface, and no need to be coated. Another purpose of this program is to bring ASNARO system into the commercial market. For example, ASNARO system is very useful for national land development in South East Asian, South American and African nations. ASNARO satellite are planned to be launched in 2012 and to be operated 5 years.