INTERNET OF SPACE THINGS: CHALLENGES AND SOLUTIONS
MOHAMMED ATIQUZZAMAN

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Abstract

DATA COMMUNICATIONS BETWEEN EARTH AND DEVICES ON SPACECRAFT, SUCH AS SATELLITES, HAVE TRADITIONALLY BEEN CARRIED OUT THROUGH DEDICATED LINKS. SHARED LINKS USING INTERNET PROTOCOL-BASED COMMUNICATION OFFERS A NUMBER OF ADVANTAGES OVER DEDICATED LINKS. THE MOVEMENT OF DEVICES ON SPACECRAFTS HOWEVER GIVES RISE TO MOBILITY MANAGEMENT ISSUES.

THIS TALK WILL DISCUSS VARIOUS MOBILITY MANAGEMENT SOLUTIONS FOR EXTENDING THE INTERNET CONNECTION TO SPACE THINGS ON SPACECRAFT. THE TALK WILL PROVIDE AN OVERVIEW OF THE NETWORK LAYER BASED SOLUTION BEING DEVELOPED BY THE INTERNET ENGINEERING TASK FORCE AND COMPARE WITH THE TRANSPORT LAYER BASED SOLUTION THAT HAVE BEEN DEVELOPED AT UNIVERSITY OF OKLAHOMA IN CONJUNCTION WITH THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION. NETWORK IN MOTION IS AN EXTENSION OF THE HOST MOBILITY PROTOCOLS FOR MANAGING THE MOBILITY OF NETWORKS WHICH ARE IN MOTION, SUCH AS THOSE IN AIRPLANES AND TRAINS. THE APPLICATION OF NETWORKS IN MOTION WILL BE ILLUSTRATED FOR BOTH TERRESTRIAL AND SPACE ENVIRONMENTS.