

**FORM 2**  
**THE PATENTS ACT, 1970**  
**(39 of 1970)**  
**& The Patent Rules, 2003**  
**COMPLETE SPECIFICATION**

**1. TITLE OF THE INVENTION:**

SYNCHRONIZATION IN A GEOSTATIONARY SATELLITE SYSTEM

**2. APPLICANT:**

Name: HUGHES NETWORK SYSTEMS, LLC.

Nationality: USA

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**3. PREAMBLE TO THE DESCRIPTION:**

The following specification particularly describes the invention and the manner in which it is to be performed:

16. A hub for use with a plurality of remotes and a satellite, the satellite being operable to bi-directionally communicate with each of the remotes and said hub, said hub comprising:  
a communication portion operable to bi-directionally communicate with the satellite; and  
a timing drift computation portion,

wherein said communication portion is further operable to obtain a drift value for each polled remote, respectively,

wherein said timing drift computation portion is operable to compute a drift value based on a difference between an initial timing reference and a subsequent timing reference as a result of a change of position of the satellite, and

wherein said communication portion is further operable to transmit, via the satellite, a closed loop timing correction feedback message to any remote whose transmission is received at the hub with a timing error greater than a predetermined amount.

Dated this 26<sup>th</sup> day of November, 2014.

A handwritten signature in black ink, appearing to read "Chetan Chadha", is written over a horizontal line. There are two small dots below the line, one on the left and one on the right.

(CHETAN CHADHA)

PATENT AGENT