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(71)**Name of Applicant :**
1)NOIDA INSTITUTE OF ENGINEERING & TECHNOLOGY
 Address of Applicant :19, Knowledge Park-II, Institutional Area, Greater Noida – 201306, Uttar Pradesh, India. -----

Name of Applicant : NA
Address of Applicant : NA

(72)**Name of Inventor :**
1)MANEESH KUMAR
 Address of Applicant :Department of Computer Science & Engineering, Noida Institute of Engineering & Technology, Greater Noida. Greater Noida -----

(57) Abstract :

The present invention relates to a multi-port data switching device (100) for classroom computer networks, comprising an instructor priority port (101), multiple student ports (102), a central processing module (103), a rule-based packet controller (104), an EEPROM unit (106), and an analytics engine (107). It enables hierarchical data routing, peer-to-peer isolation, real-time activity monitoring, and dynamic port configuration. The device supports role-based access control and reduces power consumption through intelligent port management, enhancing digital learning environments with secure, adaptive, and efficient communication.

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