IIT MADRAS
Indian Institute of Technology Madras

Technology Transfer Office
TTO – IPM Cell

Industrial Consultancy & Sponsored Research (IC&SR)

Packet Parsing in a Communication Network
IITM Technology Available for Licensing

Problem Statement

- **Efficient packet parsing** is essential for high-speed communication networks, yet existing methods may **lack flexibility and fail to optimize processing time, impacting network throughput.**
- There's a **need for a packet parsing solution** that efficiently **extracts header information, optimizes processing time,** ensures consistency across switching systems, and **enhances security measures within communication networks.**

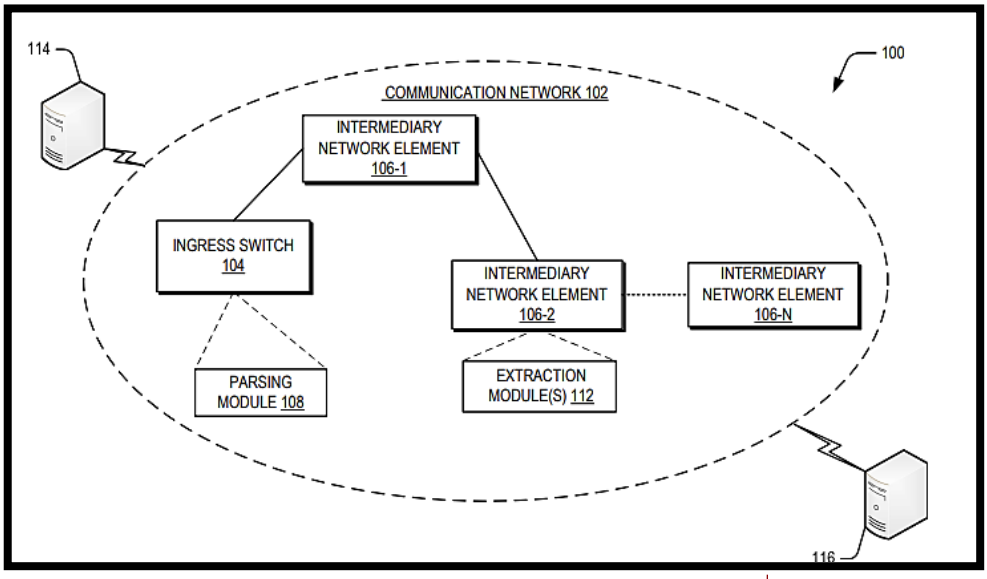

FIG. 1: illustrates a communication environment with a switching system for practicing exemplary implementations of the present subject matter

Key Features / Value Proposition

User Perspective:

- **Improved Data Transmission**: **Faster and more reliable communication** experiences due to optimized packet parsing.
- **Enhanced Security:** Ensured authenticity and integrity of transmitted data packets through advanced security measures.

Technical Perspective:

- **Parse Graph Efficiency**: Optimal packet parsing **efficiency achieved through parse graph utilization**.
- **Streamlined Packet Processing:** Consistent and efficient packet processing across switching systems facilitated by **unique parse code generation.**

Technology Category/ Market

Category – Networking Technology
Applications - Network Switching Systems, Information & Communication Technology (ICT)
Industry - Telecommunications Industry, Information & Communication Technology (ICT)
Market - The global network as a service market size was valued at USD 13.63 billion in 2022 and is projected to grow from USD 18.70 billion in 2023 to USD 155.17 billion by 2030, exhibiting a **CAGR of 35.3%.**

Intellectual Property

- **IITM IDF Ref. 1943**
- **IN 481707 (Patent Granted)**

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Technology

Parse Graph-based Packet Parsing:
Utilizes a parse graph to efficiently parse received packets, improving processing speed and accuracy.

Unique Parse Code Generation:
Generates a unique parse code indicating the sequence of protocol header information, facilitating streamlined processing across switching systems.

Header Field Extraction:
Extracts header fields from parsed packets, providing essential data for packet forwarding and processing.

Encapsulation of Parse Code:
Encapsulates the unique parse code with extracted header fields, ensuring consistency and facilitating efficient processing in subsequent switching systems.

Security Enhancement:
Incorporates signature encapsulation to enhance security measures, ensuring authenticity and integrity of transmitted packets within the network.

TRL (Technology Readiness Level)

TRL- 2 - Technology Concept Formulated

Image

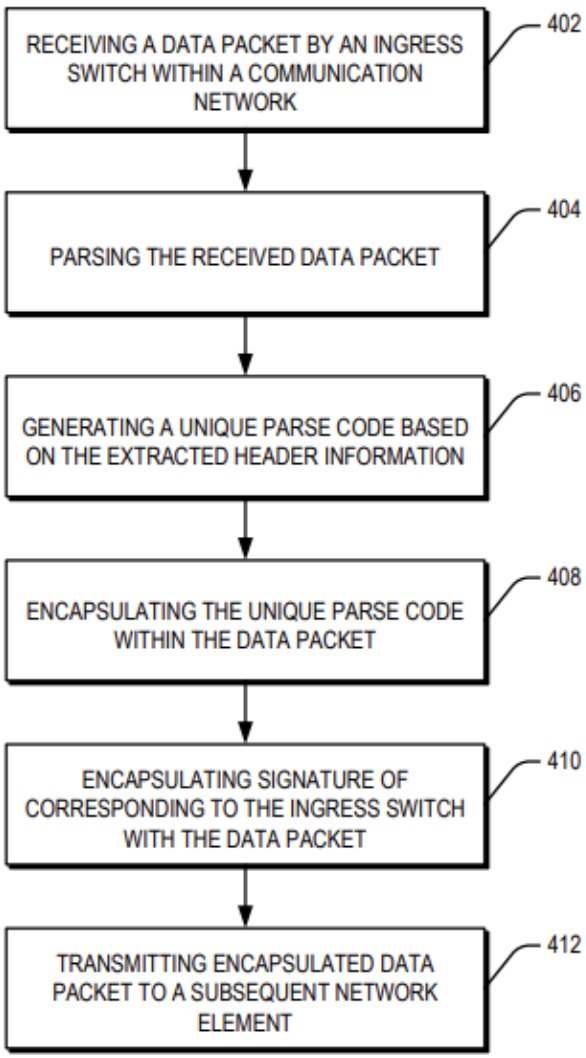

FIG. 4 Flowchart for generating unique parse code at ingress switching system.

Research Lab

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