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You Can Move Packets, Now What?

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13. ABSTRACT *(Maximum 200 words)*

Instrumentation designs currently consist of centralized data acquisition systems (where components are located in one general area of the test article), distributed data acquisition systems (where components are placed around the test article), and data acquisition networks (where a distributed system is interconnected via a network bus). Data acquisition networks will have far reaching effects on the test and evaluation process because data is moved in packets and commercial communication standards are used.

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Data Acquisition Network Test and Evaluation

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You Can Move Packets, Now What?

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Instrumentation Designs

- Centralized data acquisition systems
  - Components located in one general area of the test article
- Distributed data acquisition systems
  - Components placed around the test article
- Data acquisition networks
  - Distributed system interconnected via a network bus

Data Acquisition Networks

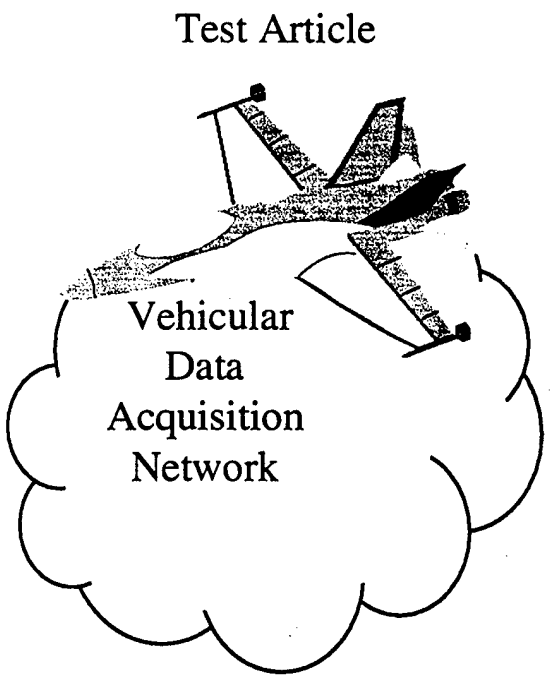
- Data is moved in packets
- Use commercial communication standards
- Will have far reaching effects on the Test and Evaluation process
  - Concepts like data driven acquisition become achievable
  - Data compatibility with traditional computer networks

Leading the Way to Data Acquisition Networks

- Range Commander's Council Tasks
  - TG-54 Instrumentation Bus Standard
  - TG-53 Packetized Telemetry

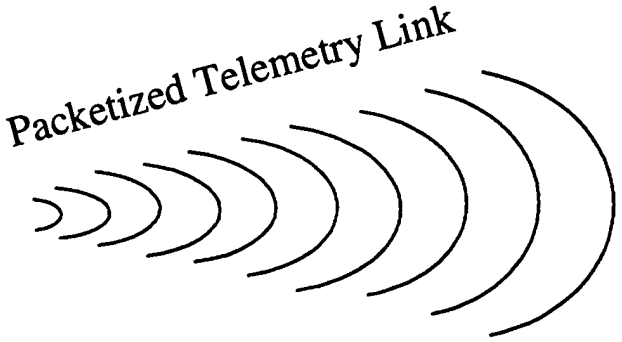
- NexGenBus project sponsored by OSD

Instrumentation Bus Standard



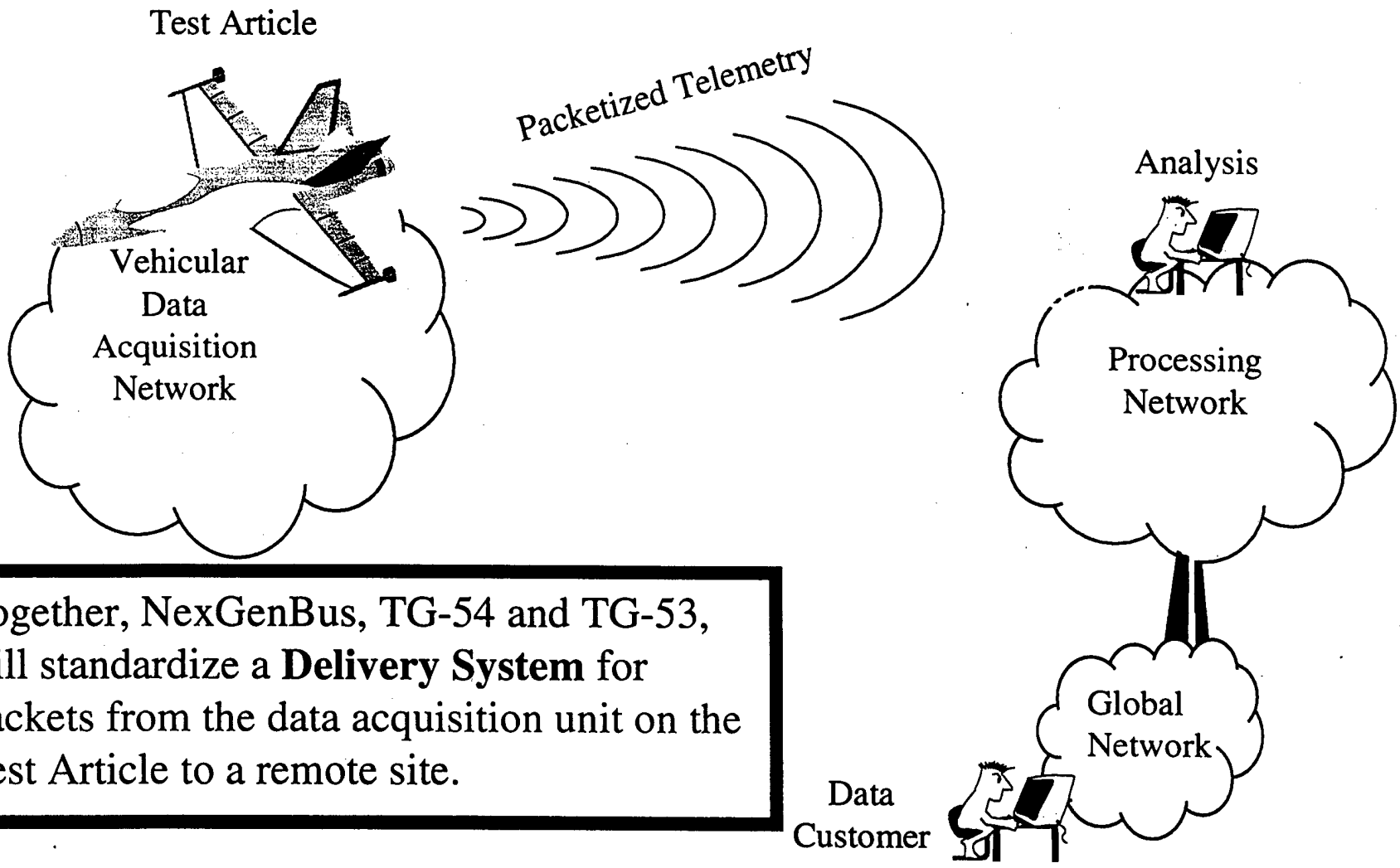
TG-54 and NexGenBus Will Standardize the **Delivery System** for Packets within the Vehicular Data Acquisition Network.

Packetized Telemetry Standard



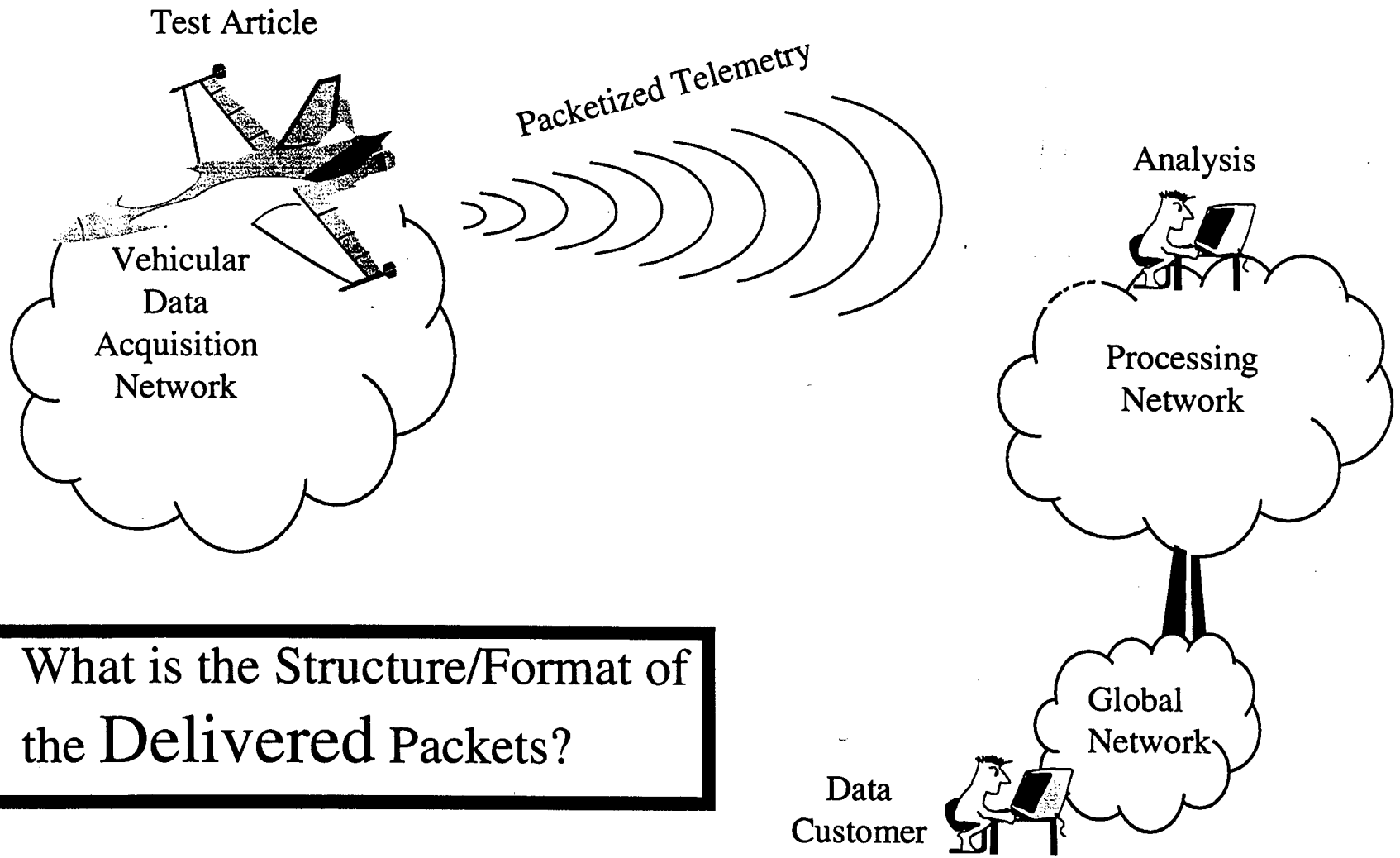
TG-53 will Standardize the **Delivery System** for the Transmission of Packetized Data

You Can Move Packets



Together, NexGenBus, TG-54 and TG-53, will standardize a **Delivery System** for Packets from the data acquisition unit on the Test Article to a remote site.

Now What?



What is the Structure/Format of the **Delivered** Packets?

Mail System Analogy

- Provides delivery across the street or across the country
- Delivery is provided without regard to contents
- Without a mutual understanding (language, format, etc.) delivered letter cannot be understood

Letters with Non-Standard Format

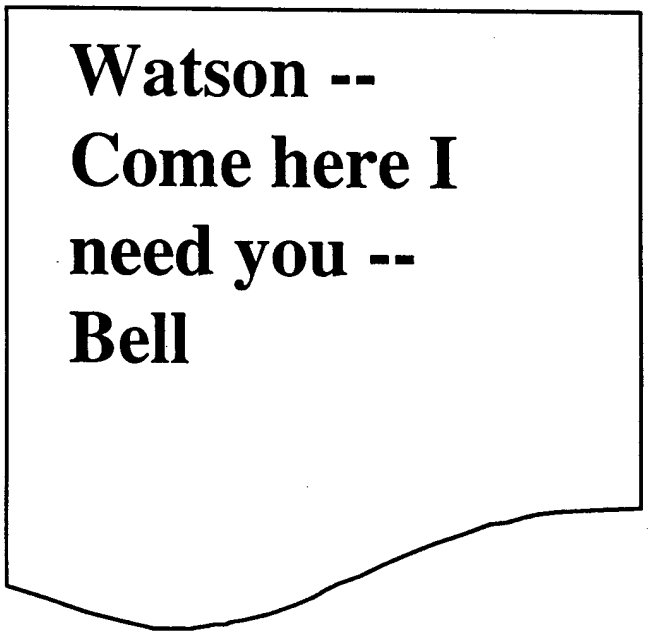
- Knowing the unique language and format rules the following can be understood

watsoncome
hereineedyo
ubell

lleB --
uoy deen I
ereh emoC --
nostaW

Letter with Standard Format

- Easily understood because it uses a commonly understood language and format rules



RCC Ad Hoc Committee

- The RCC Telemetry Group has proposed the creation of an AD Hoc committee
  - To study the issues
  - Define the structure/format of packetized data created on the test article
  - Communicate the attributes of packetized data to the user

Summary

Will packetized data be a small or large part of our business?

Either way you need the standards