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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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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

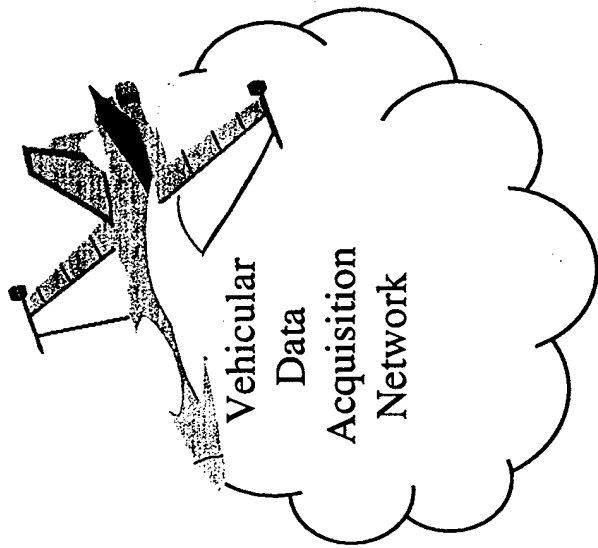
- Data is moved in packets
- Use commercial communication standards
- Will have far reaching effects on the Test and Evaluation process
 - Concepts like data driven acquisition become achievable
 - Data compatibility with traditional computer networks

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

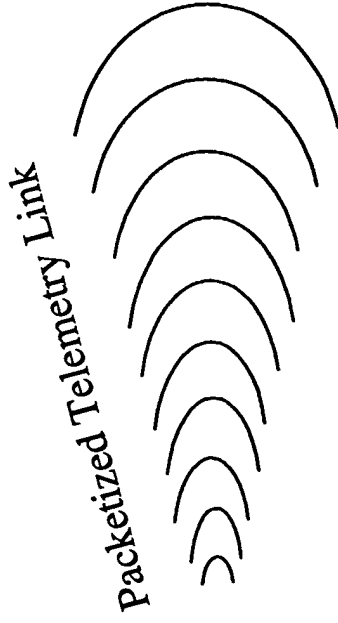
Instrumentation Bus Standard

Test Article



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

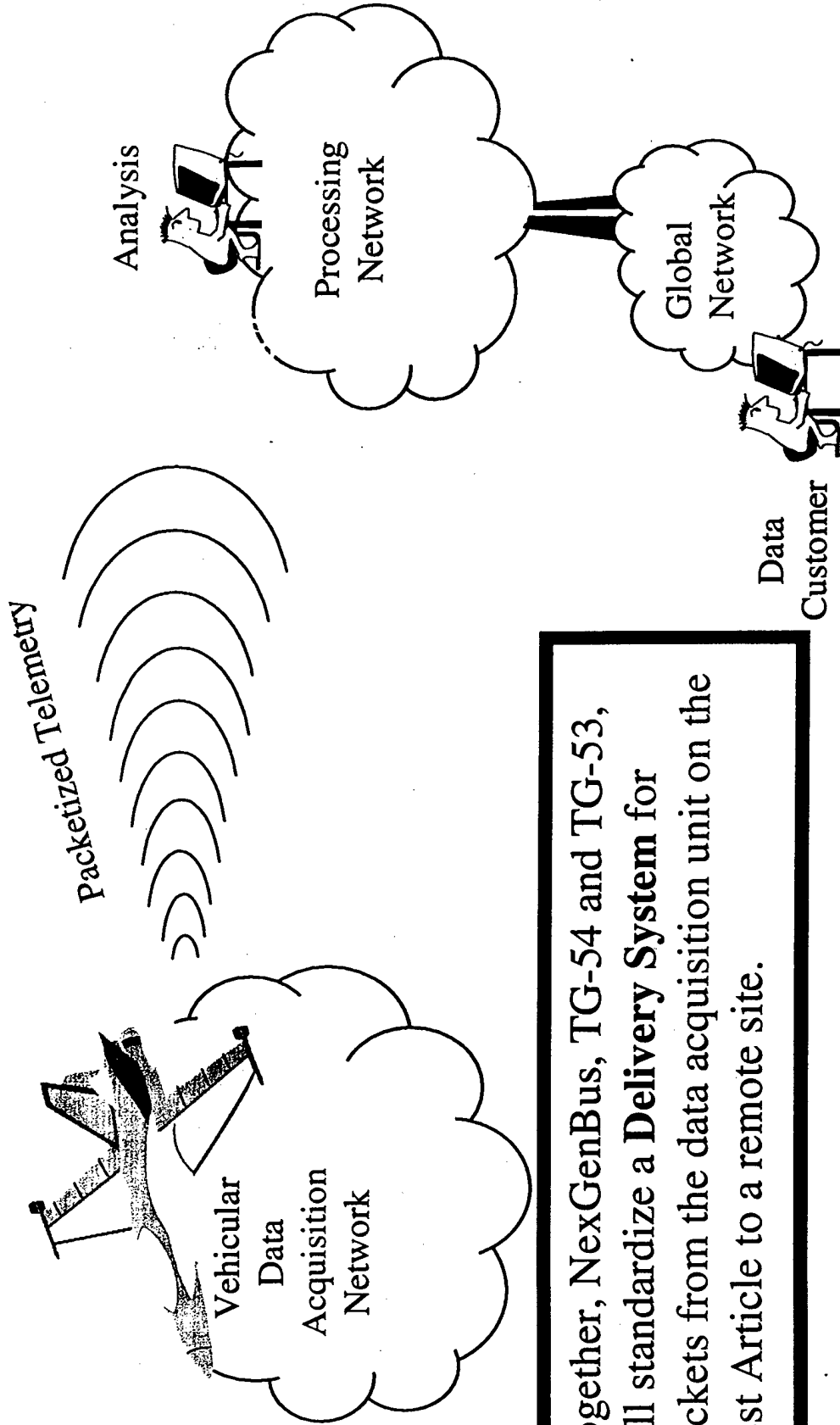
Packetized Telemetry Standard



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

You Can Move Packets

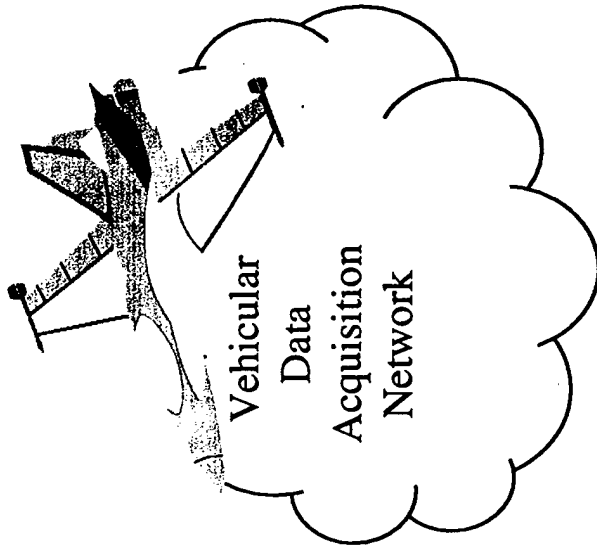
Test Article



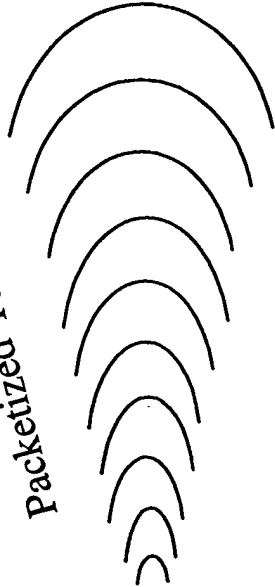
Together, NexGenBus, TG-54 and TG-53, will standardize a **Delivery System** for Packets from the data acquisition unit on the Test Article to a remote site.

Now What?

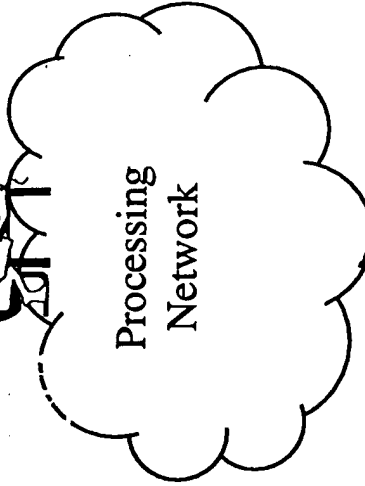
Test Article



Packetized Telemetry



Analysis



Processing
Network

Global
Network



Data
Customer

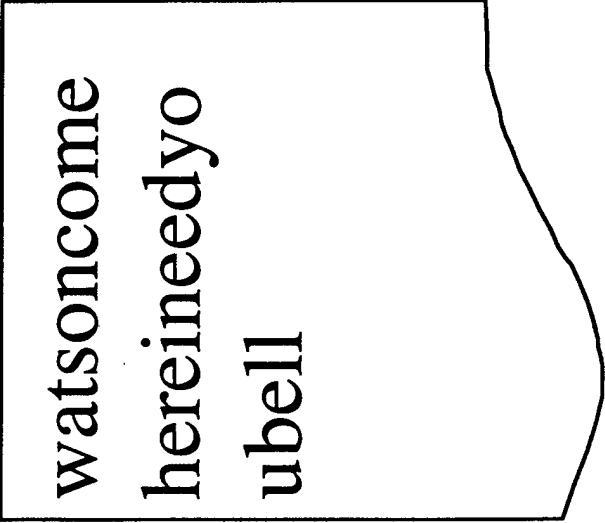
What is the Structure/Format of
the Delivered Packets?

Mail System Analogy

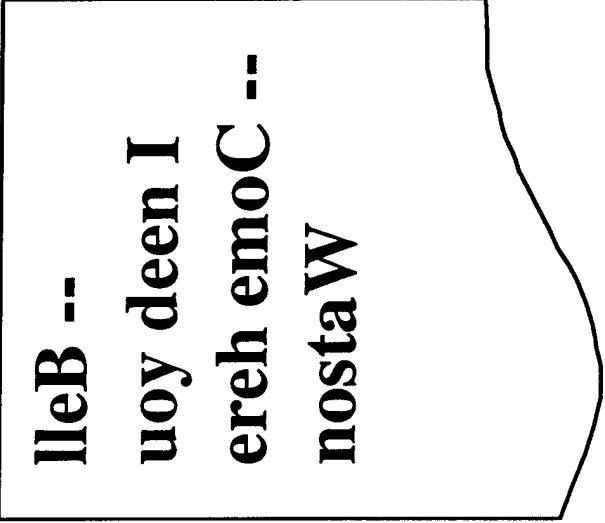
- Provides delivery across the street or across the country
- Delivery is provided without regard to contents
- Without a mutual understanding (language, format, etc.) delivered letter cannot be understood

Letters with Non-Standard Format

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



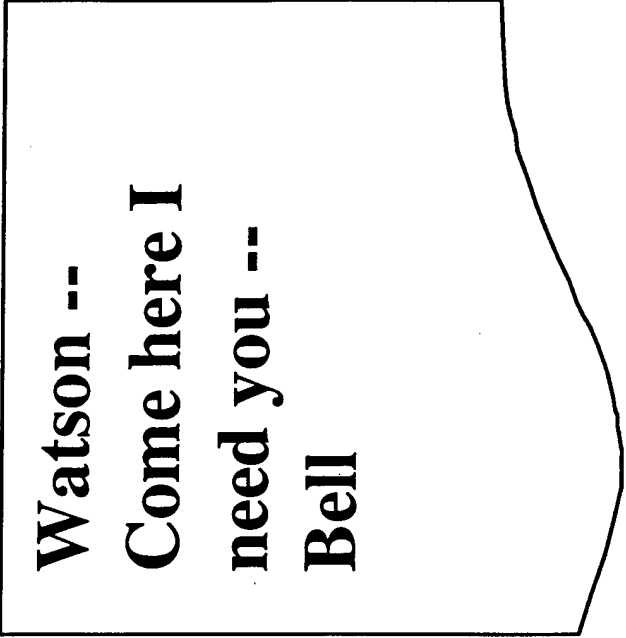
watsoncome
hereineedyo
ubell



lleB --
uoy deen I
ereh emoC --
nosta W

Letter with Standard Format

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



**Watson --
Come here I
need you --
Bell**

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

