Hi there!

Welcome to our End-to-End Telemetry System.
Click on a station to get started.

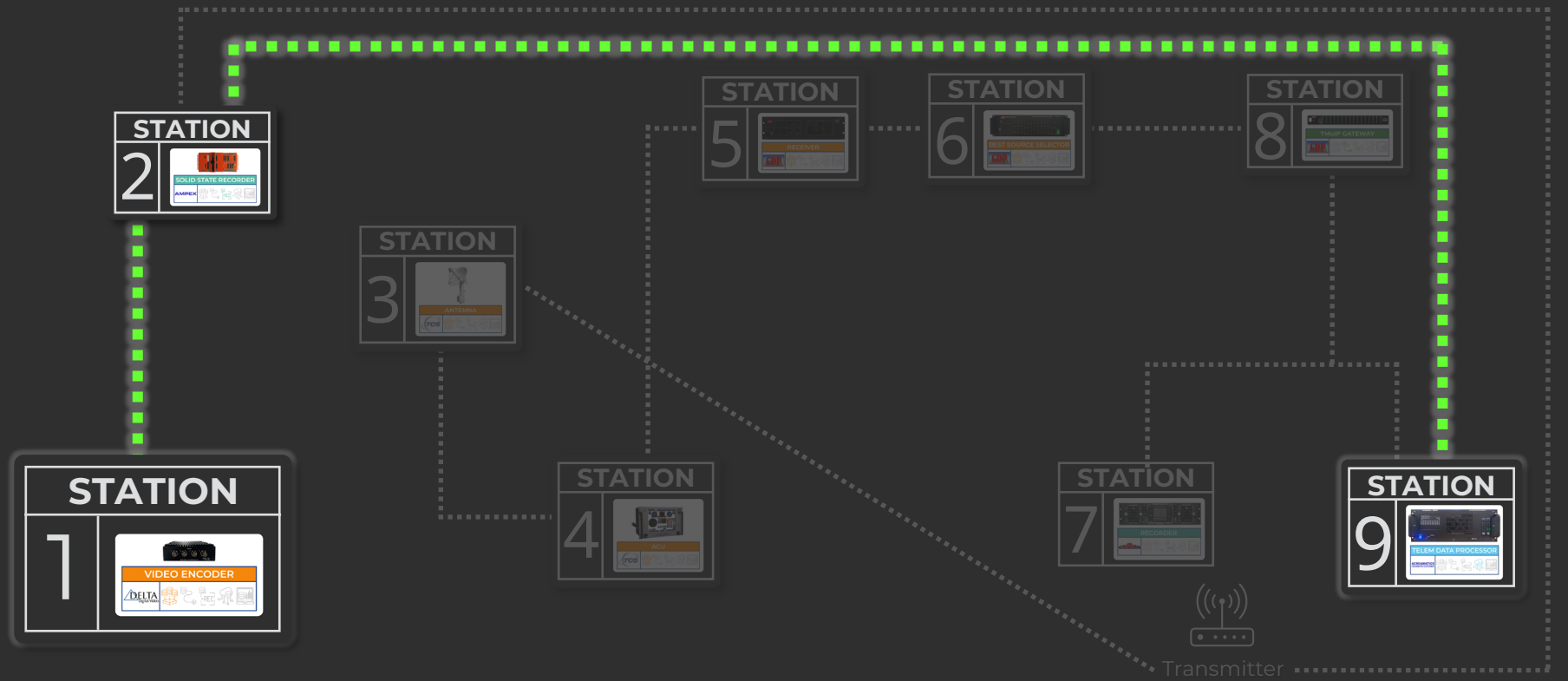
We recommend you start on Phase 1 if you're new to Telemetry.

WHAT IS TELEMETRY

WHAT IS TELEMETRY

NEXT STATION

STATION 1



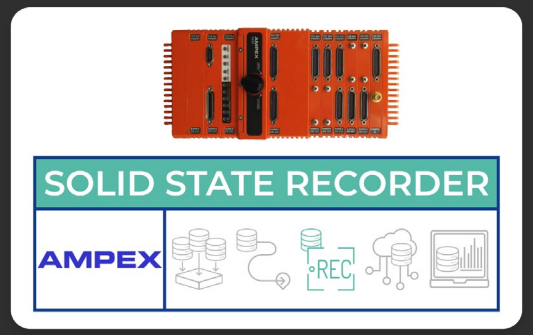
Station 1's Video Encoder Transfers HD Video Generated By On-board Sensors And Displays

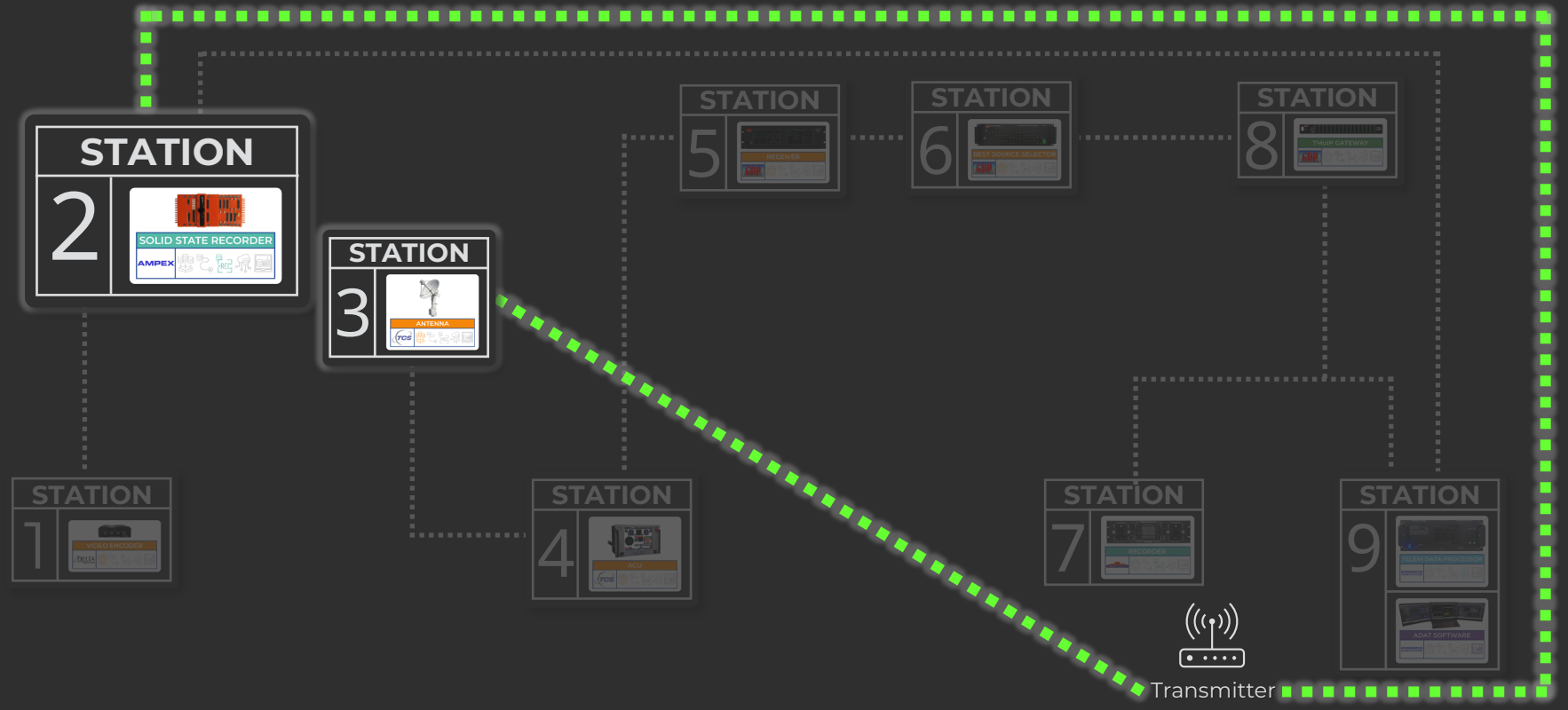
Generated Video Is Delivered Over IP To **Station 2's** Solid State Recorder

Station 9's Telemetry Data Processor (TDP) Generates Simulated PCM

Generated PCM Is Delivered To **Station 2's** Solid State Recorder

STATION 2





Station 2's Solid State Recorder Multiplexes PCM & Ethernet Video Into A CH10 Stream

CH10 Stream Is Encapsulated In A CH7 Stream And Then Delivered To The Transmitter

The Transmitter Modulates The Data And Upconverts To An L-Band Signal

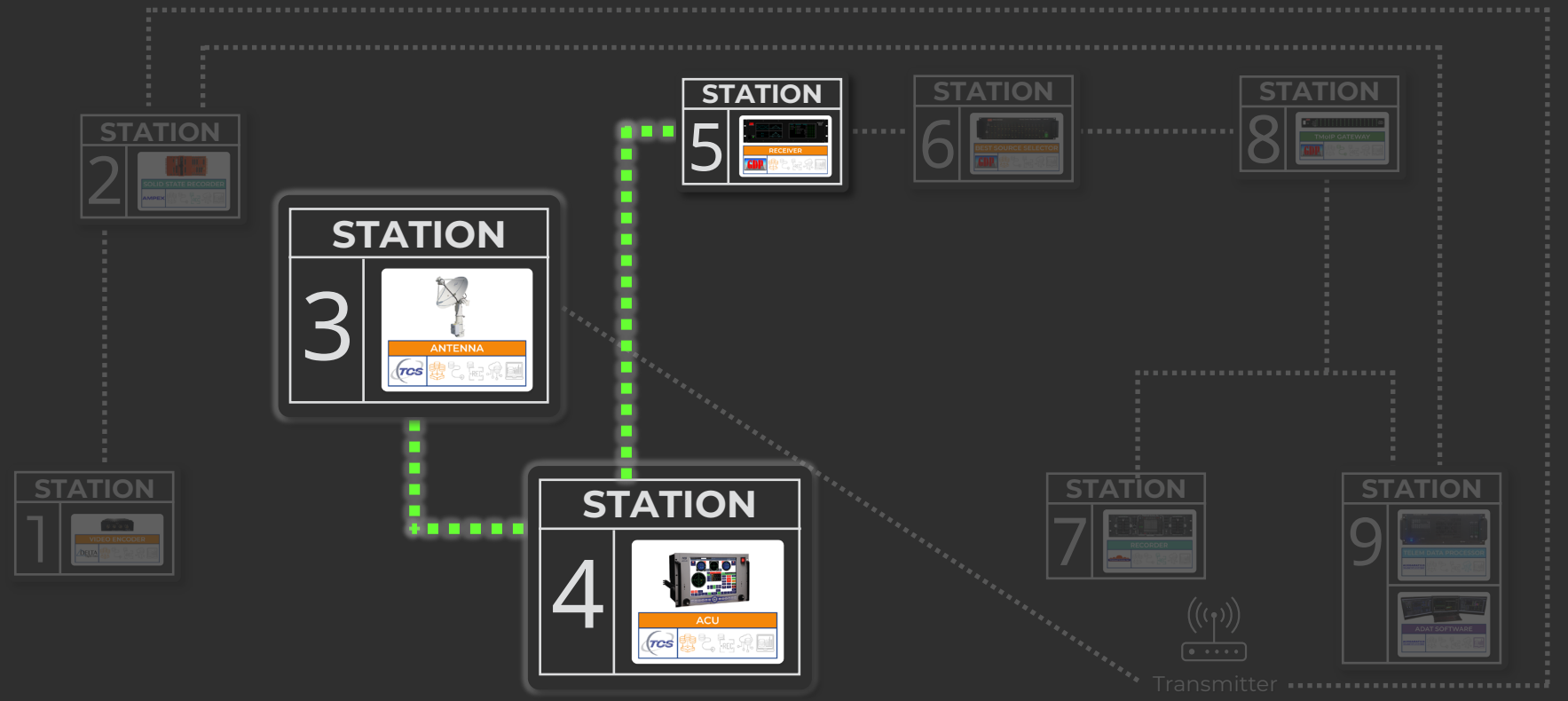
The L-Band Signal Is Transmitted To **Station 3's** Tracking Antenna

STATION 3

ANTENNA

STATION 4

ACU



Station 3's Tracking Antenna Receives The L-Band Signal From The Transmitter

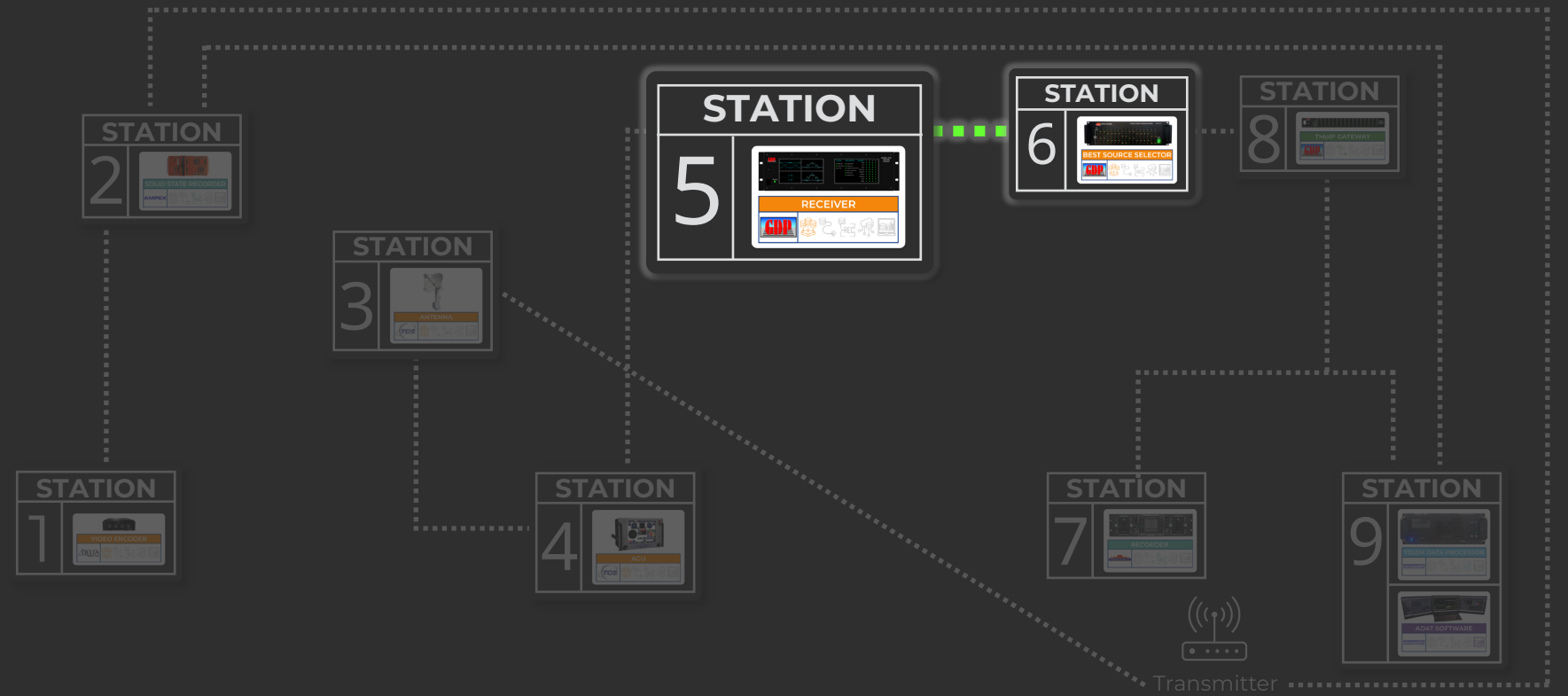
Local Video Is Also Captured At **Station 3** Via The Antenna Boresight Camera

Station 3's Antenna Delivers The L-Band Signal And Local Video To **Station 4's** Antenna Control Unit (ACU) Via A Fiber Connection

Station 4's ACU Displays The Antenna Local Video On The Front Panel

Station 4's ACU Also Delivers The L-Band Signal To **Station 5's** Telemetry Receiver

STATION 5

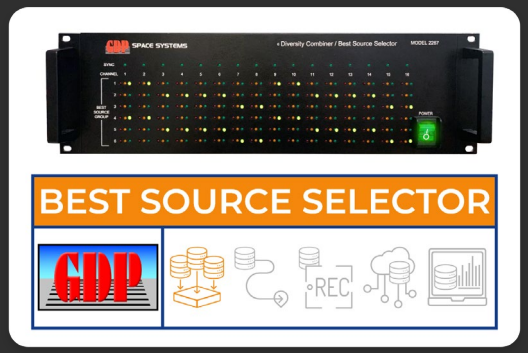


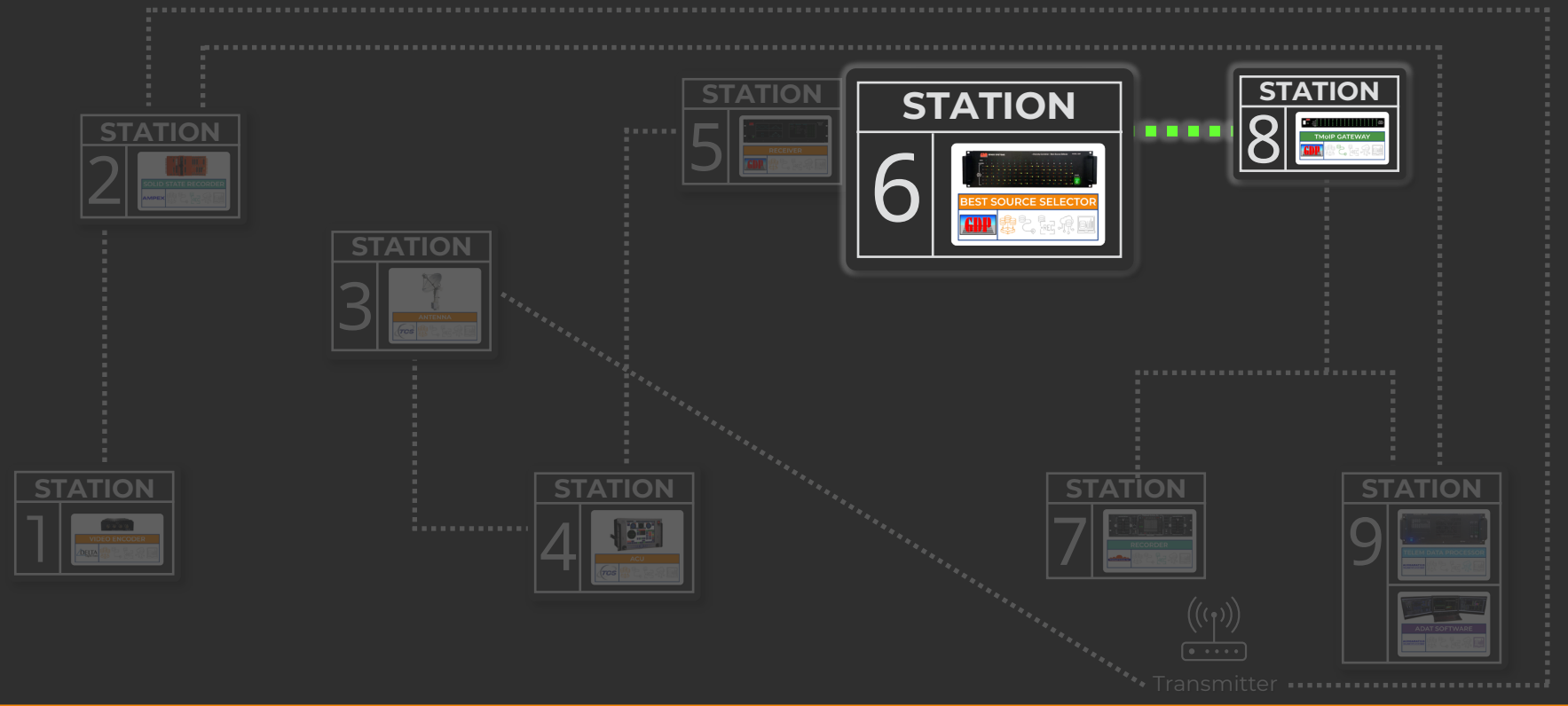
The L-Band Signal From **Station 4** Is Split 4 Ways To Simulate 4 Antennas And Delivered To **Station 5's** Telemetry Receiver

Station 5's Telemetry Receiver Converts And Demodulates The 4 L-Band Signals

Station 5's Telemetry Receiver Sends The 4 Demodulated Streams To **Station 6's** Correlating Best Source Selector (BSS)

STATION 6





Station 6's BSS Correlates The 4 Received Data Streams And Outputs A Single Optimized Data Stream

Station 6's Optimized Output Best Source Data Stream Is Sent To **Station 8's** TMoIP Gateway Via PCM

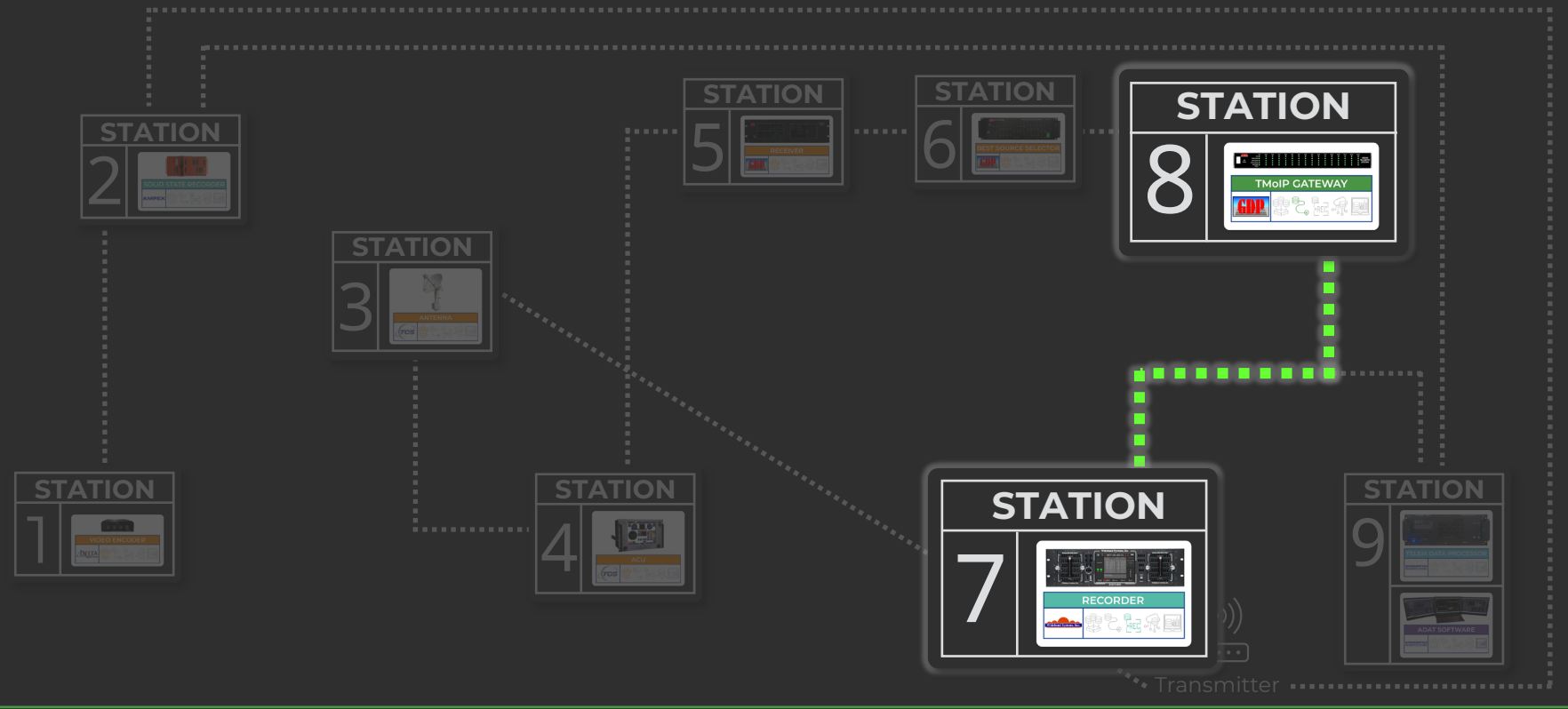
Station 8's TMoIP Gateway De-encapsulates CH7 PCM Received From **Station 6's** BSS Optimized Output

STATION 8

TMoIP GATEWAY

STATION 7

RECORDER



CH10 Stream Containing PCM And Video Are Sent As CH10 UDP Over IP To **Station 7's** Wideband Recorder

Station 7's Wideband Recorder Records And Plays Back CH10 UDP Stream

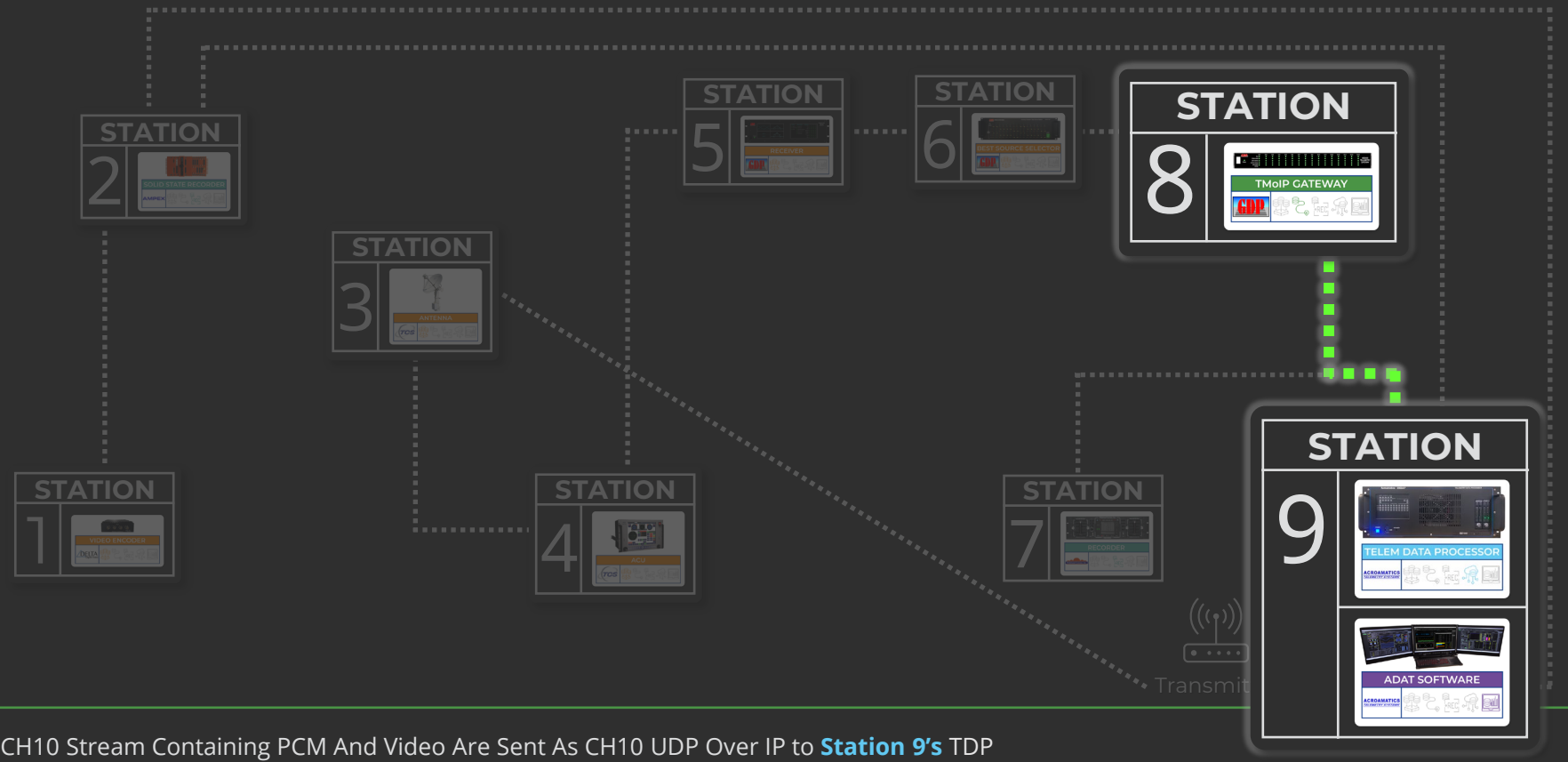
STATION 8

TMoIP GATEWAY

STATION 9

TELEM DATA PROCESSOR

ADAT SOFTWARE



CH10 Stream Containing PCM And Video Are Sent As CH10 UDP Over IP to **Station 9's** TDP

Station 9's Displays The PCM and Video Data via ADAT Software

WHAT IS TELEMETRY?

Here at Delta Information Systems, we've broken it down into 5 easy to follow phases.

Acquisition

Airborne acquisition on the vehicle side involves capturing video and sensor data for recording & transmission to the ground.

Ground acquisition involves capturing and maintaining fidelity of the source signal using various equipment, starting at the antenna. The captured signal is amplified, filtered, and sent to receivers and bit syncs for processing. Multiple antennas and receivers may capture the signal, with a Best Source Selector used to ensure data quality.

Transport

In the transport phase, telemetry data must be efficiently moved from acquisition sites to mission control rooms. This often involves converting synchronous serial telemetry data to Internet Protocol (IP) telemetry using devices like PCM/Ethernet TMoIP Gateways for long-distance transmission.

Data format conversions are handled by tools like Data Distribution Systems (DDS) to ensure secure and efficient transfer of information across varying Range architectures.

Record

The recording phase captures and stores telemetry data for later analysis. Telemetry recorders are essential for this task during aerospace system tests and missions. Recorded data is crucial for evaluating system performance, identifying anomalies, and making improvements.

These recorders offer many options to address storage capacity and mission objectives, from native signal reconstruction to TMoIP over Ethernet, catering to various data requirements and playback preferences.

Process

In the processing stage, telemetry data is prepared for human interpretation. This involves extracting and decommutating data from the transport medium, retrieving encapsulated data, and applying engineering unit conversions before sending it to a display system.

Telemetry Data Processing (TDP) systems excel in providing deterministic time correlation and processing of the sensor data.

Display & Analysis

After processing, telemetry data is analyzed and displayed for visualization, using mathematical equations and diverse display options within a flexible Graphical User Interface (GUI).

Tools like Acroamatics Display and Analysis Tool (ADAT) simplify this process with customization, real-time playback, and various display widgets, aiding mission-critical decisions.