

The **TACTICAL PROTOCOL TOOLS** suite comprise a family of systems and applications, aimed at the proper integration and interoperability of legacy and contemporary sensors and equipment in today's multinational environment.

Built-in analysis facilities at the interface as well as the protocol level help in pin-pointing profile incompatibilities and adjusting protocol stacks to accommodate a broad range of both military and commercial implementations.

## Features

- Allows control at the interface level to identify base protocol properties
- Open architecture allows the development of new device drivers / protocol stacks for integration of future sensors and equipment
- Record time-stamping and logging facilities
- Link simulation facilities
- Target display facilities (Plot, Track)
- Broad range of interfaces supported, including SYNC/ASync, IP, MIL-STD-1553B

## Products

LINK_ANALYZER	Tactical/RADAR Data Link Analyzer - Commercial RADAR - SYNC/ASync/IP links - Bidirectional record time-stamping and logging
LINK_SIMULATOR	Tactical Data Link Simulator - Link 1, Link 11B, DDL, RSRP... - Stationary and moving targets - Link establishment and release
RSRP-1.0	RSRP (Radars for the South Region and Portugal) Protocol Compressor/Decompressor for low-rate communication channels - 9600 bps to 2400/1200 bps
RADCON	Radar Protocol Translator and Network Interface Converter - Sync/Async/IP Tactical / Commercial RADAR and Tactical Data Link (TADIL) protocols - Data filtering - Single or multi-sensor operation - Active or passive operation (for bi-directional links)
U1	SYNC/ASync to SYNC/ASync, Parallel, IP, MIL-STD-1553B interface and protocol converter

## Services

LINK_CUST	LINK CUSTOMIZATION - custom protocols and adaptations
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```
ddlr: TEST / TEST
ddlr: 1052996855 -- OK --2e 2e 2e 2e
ddlr: T.5 Site 6 Pri 1 Sec 5
ddlr: 1052996858 -- OK --0b 00 00 00 00
ddlr: T.1a NAI Rng 58.0 DM ... 0 Sec 172 SCV
ddlr: 1052996858 -- OK --28 40 01 1d 1c 03 00 09 00 00 7a 20 00 00
```



```
4a 99 442a a871 b03d 9b54 c2b2 0474 5db1 0000 03
4b 99 2a44 71a8 3db0 549b b2c2 7404 b15d 0000 03
4c0 Site 2, SR/SSR, No Emergency, No Reply, No M4/SM4
4c1 113.66 dm, Not within radar management
4c2 86.74 degrees, No X-pulse
4c3 33800 ft, 27 dB
4c4 Timestamp 715/32 sec, Mode C height valid
4c5 Primary Mode 3/A, Pr. Valid, Code = 2004
4c6 Secondary Mode C, Sec. Valid, 34900 ft
4c7 Tertiary Mode Not Used
```



TACTICAL PROTOCOL TOOLS

## Application

The **TACTICAL PROTOCOL TOOLS** suite comprise a family of system interfaces and applications, aimed at achieving seamless sharing of data between critical military and commercial systems, such as RADAR and other sensors and entities.

To this end, the identification of incompatibilities in the protocol stacks, as implemented by different vendors, and the subsequent adaptation of system interfaces is crucial.

The **TACTICAL PROTOCOL TOOLS** suite consists of low-level interface drivers, implementing the different bit and block encoding methods used by RADAR and tactical links, protocol translator modules and a unified link data structure. This affords "all-to-all" conversions and adaptations, with link-specific data formats, units and precision.

At the application level, a link simulator coupled with a logging and graphics display interface allows for real-time link monitoring and troubleshooting while a target simulator enables end-to-end performance tests of complete systems.



## TACTICAL PROTOCOL TOOLS specifications

<b>Interfaces</b>	Serial/Multi-Serial SYNC/ASYNc direct connections Ethernet MIL-STD-1553B
<b>Application</b>	TACTICAL/RADAR Data Link Recording – Real Time Monitoring TACTICAL/RADAR Data Link Simulation TACTICAL/RADAR Data Link Translation/Conversion
<b>Protocols</b>	MPDR/DDDL, ATDL-1, Link 1, Link 11B, RADEX, RIS, RSRP, ASTERIX
<b>Host</b>	Notebook computer (SYNC/ASYNc monitoring and simulation), Desktop and notebook computer (SYNC/ASYNc/1553B), Rack-mounted computer (permanent protocol translation/conversion products)
<b>Status Display</b>	Console display for batch recording/simulation, Graphics and/or line output display for real-time monitoring and troubleshooting, LCD display for protocol translation/conversion products.
<b>Time-stamping &amp; Archiving</b>	Continuous time-stamping and archiving of raw (interface) and cooked (protocol translation) data on multiple interfaces. Text and/or binary storage.
<b>Target simulation</b>	Multi-target stationary or moving target simulation (plots, tracks). Target height, speed, direction are programmable.
<b>Message Lists &amp; Display Monitoring</b>	Link messages are interpreted in real time. Plot/Track data can be projected on zoomable radar-type display.
<b>Events</b>	CRC error and link connection/disconnection events are included in link archives.
<b>Post-processing</b>	Data filtering and playback capability.
<b>Configuration</b>	Assignment of link parameters as appropriate (Unit identification, Data Link Reference Point, Target Blocks etc.)
<b>Link Test facilities</b>	Connection, idle, normal and abnormal frame sequence generation for link testing.
<b>Additional facilities</b>	Customization for specific applications Fabrication of special cables for monitoring specific links

## List of Services Offered

<b>Training</b>	Maintenance Personnel.
<b>Pre-Installation</b>	Application planning, installation study.
<b>Installation</b>	Installation, Setting to work.
<b>Post-Installation</b>	After sales technical support.



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