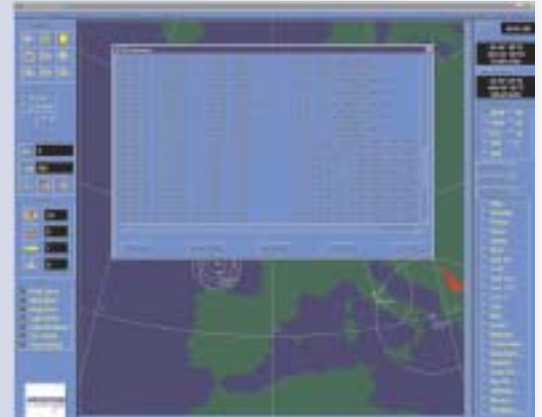


AGILE

AGILE (Aerosystem's Generic Integrated Link Environment) is a tactical datalink simulation and test facility. It is in use world-wide on many different applications for testing command systems and to provide simulation systems for training link operators.

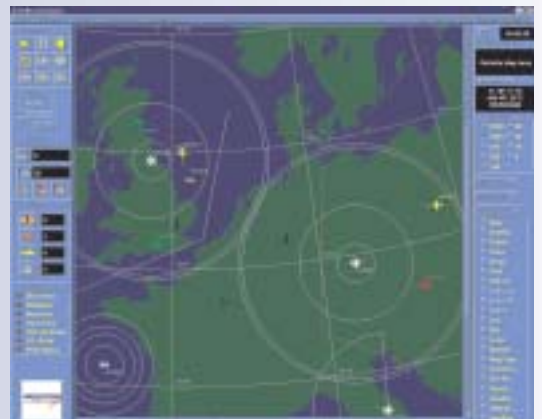
Facilities include:

- Ability to rapidly generate complex scenarios containing a large number of operational platforms and tracks
- Multiple Link capability, including Link 11, Link 16, and other non NATO standard Links
- Growth capability for Link 22 and Joint Range Extension
- Terminal Initialisation capability
- Simulation of aircraft, ships, sub surface and land tracks
- Received and transmitted message display, recording and filtering
- Real-time message generation, either pre-scripted or generated during the exercise
- Operator can add/delete tracks or modify scenario during operation
- Can operate in "Host Mode", driving a Link terminal/modem, or in "Terminal Mode", simulating the terminal function
- Supplied with the SIMPLE Interface (Standard Interface for Multiple Platform Link Evaluation, STANAG 5602)
- AGILE can be slaved to a master scenario from an external source, using either the international standard of SIMPLE or DIS, or a bespoke interface
- Extensive on-line and post test analysis capability
- Automated message interaction between simulated units and automatic message transaction processing
- Using the proprietary database management tool DAMSL™, the operator is able to create and modify the datalink database(s) or create unique database(s) for use in the operator's own environment
- DAMSL can also be used to add platform types, add message transmit capability, with the ability to tailor track characteristics including Link, Radar and ESM



Message interaction

AGILE can generate the messages resulting from the interaction of simulated units either with other simulated units or the exterior system under test. This capability includes actions such as correlation, de-correlation and control together with optional modules providing specific interaction such as grid locking, relative navigation and electronic counter measures.



Message transaction processing

Through the use of the flexible database management system, the **AGILE** user can specify the actions to be carried out when information is transacted on a message by message basis. This capability includes initiating command and control events as well as handling receipt compliance and automatic message acknowledgement.

Datalink interfaces available:

- Link 16 (TADIL-J):
 - › US Navy Air
 - › F-15
 - › F-16
 - › F-22
 - › MCE
 - › US Navy Ship
 - › UKADGE
 - › E-3 Bus
 - › JSTARS
 - › Royal Navy Ship
 - › Army Class2
 - › AN/URC 138 (SHAR)
 - › MIDS type "B"
 - › MIDS type "D"
- Link 11 (TADIL-A):
 - › NTDS
 - › ATDS
- Link 11B (TADIL-B)
- Other interfaces:
 - › X25
 - › RS-232C
 - › Internet
 - › Telephone
 - › Ethernet
 - › TCP/IP
 - › SIMPLE
 - › DIS

End users:

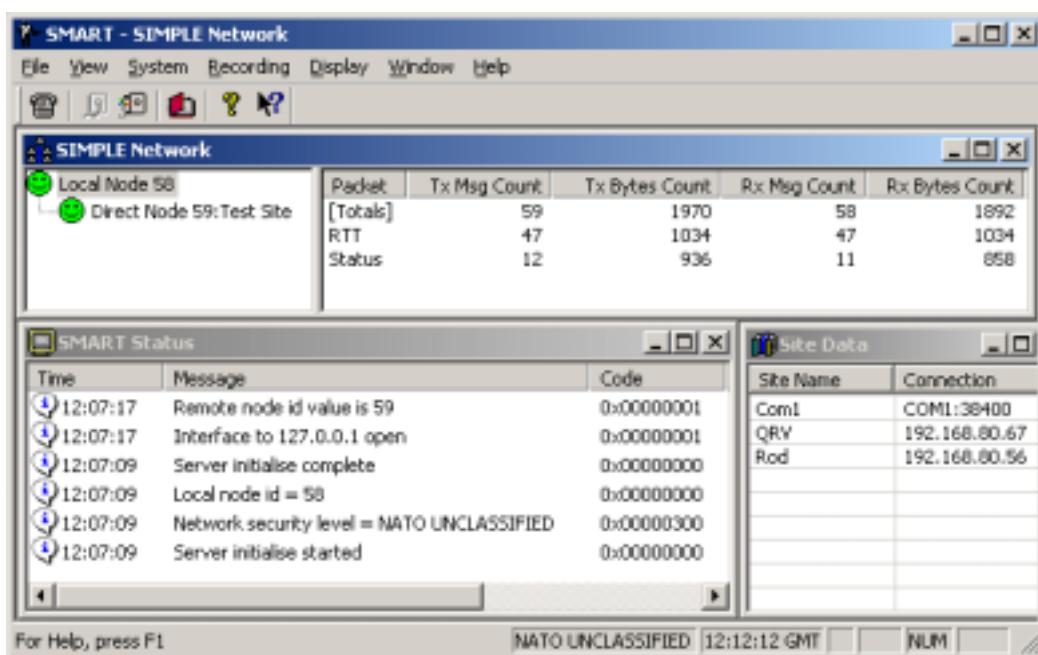
- UK Royal Navy - Portsmouth
- BAE SYSTEMS
- Boeing
- Raytheon
- MoD Defence Procurement Agency
- Rockwell Collins
- Logica
- Racal
- Langley Air Force Base
- Eglin Air Force Base
- Warner Robins
- Mc Lennon Air Force Base
- JTIDS Programme Office (JPO)
- Litton
- Northrop Grumman
- Norwegian Defence Logistics Organisation (Air)
- Thales

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SMART

Aerosystems' SIMPLE (Standard Interface for Multiple Platform Link Evaluation) Management And Routing Tool is a server application program designed to act as a gateway to a STANAG 5602 compliant SIMPLE network. Multiple client applications can connect to the SMART server and exchange Tactical Data Link information and scenario data with other SIMPLE-compliant nodes without any knowledge of the underlying communications architecture or of the routing requirements of the network.



Features include:

- User friendly 'Windows' HCI
- Full SIMPLE PDU message catalogue support
- Message queuing on all connections
- Error logging and reporting
- Connection to multiple remote nodes
- Selectable recording of all SIMPLE PDUs, both transmitted and received
- Comprehensive collection of instrumentation data (e.g. bandwidth statistics and message counts)
- Easy to distribute site connection database
- Connection through TCP/IP or RS-232

Data Routing

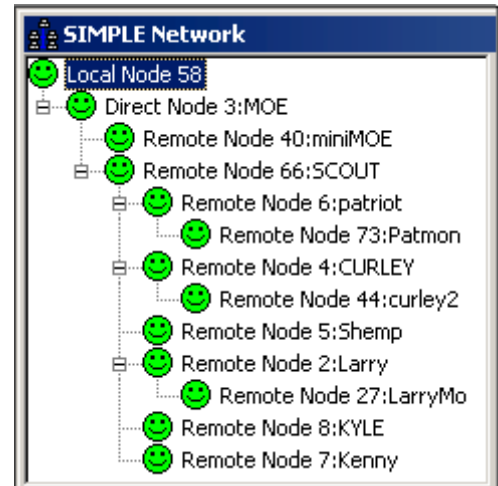
SMART can route a SIMPLE PDU on a point-to-point, broadcast or multicast basis as required by STANAG 5602.

SMART implements a routing algorithm which, if selected by the operator, stops selected messages being routed to a specified node. It can also discard messages if a destination node is not within theoretical RF connectivity of the source node or is masked by horizon effects.

Network Monitoring

As well as instrumentation data, SMART displays a topological view of the network as interpreted from data received from remote nodes. This allows the operator to see exactly which nodes are participating in the network and how their information is being routed to the local site.

The display uses easy to understand indicators for status displays (Green for good, Red for bad) in order that an operator can spot any potential problems without the need to hunt through large recording files.



Mandatory PDU support

Two of the four mandatory SIMPLE PDU types are handled within SMART automatically, namely 'Status' and 'RTT' messages. The other two types (FTP and Time Synchronisation) are handled by dedicated clients supplied with the product.

Client API

In order to facilitate the easy integration of SMART into any Windows application, both present and future, the product comes with a client API giving full access to the message processing abilities of SMART.

Test Suite

SMART includes a Test Packet Generator client application which can be used to create script files of correct or incorrect PDU message types.

Future Proof

SMART can handle any SIMPLE PDU currently defined in STANAG 5602 and is also able to process any type yet to be defined, excluding any special processing requirements.

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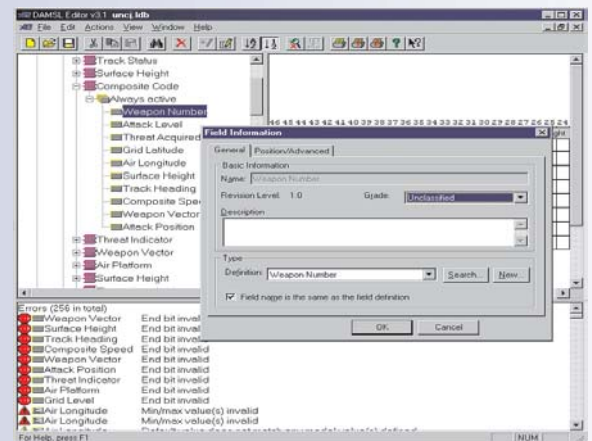
DAMSL

Dictionary and Message Specification Language

Why is datalink integration expensive?

In most systems datalink implementation is embedded in the application source code. Given the complexity of datalinks such as Link 11 or Link 16 it is a very resource consuming (and therefore expensive) task to encode the message format and associated rules using a high level programming language such as C, C++ or Ada. Given the fact that each datalink is unique, this task often has to be repeated for each datalink implemented in the system (e.g Link 1, Link 4, Link 11, Link 16, Link 22).

Since the datalink format is embedded in the source code, each time a single field is modified in the Datalink standard, it is therefore necessary to carry out the design reviews, source code modification and re-compilation, regression testing and update of the associated documentation.

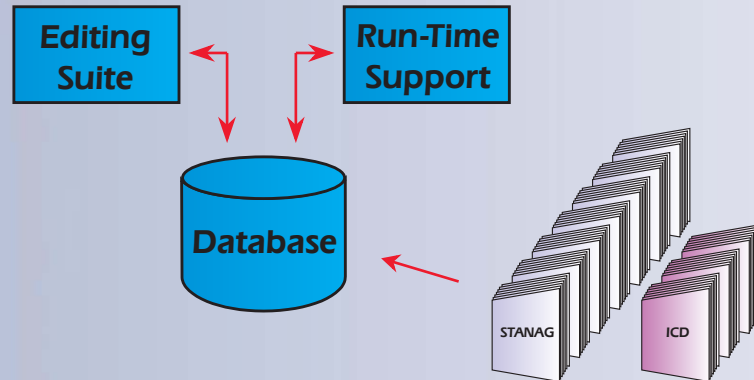


How can we reduce these costs?

Working from this evidence, Aerosystems has developed the Dictionary and Message Specification Language (**DAMSL™**). This datalink processing tool provides the means to define datalinks (message format and transmit/receive rules) in a format that can be directly interpreted by the machine.

DAMSL™ incorporates three packages:

- a database comprising:
 - ✓ message definition,
 - ✓ transmit/receive rules,
 - ✓ datalink implementation (limited),
 - ✓ structure of the application tables.
- a database editor (DBED) to enter data in the database.
- a run-time library providing the following functions:
 - ✓ automatic datalink processing,
 - ✓ format conversion,
 - ✓ interface with the application software.



DAMSL™ provides the encapsulation of the complete datalink definition. In a DAMSL™ based application, the application software concentrates on processing operational information, and is independent from the format of the transmitted/received datalink messages and rules.

Using **DAMSL™** provides a high level of flexibility. No datalink messages need to be hard coded in a message structure file. Data are entered in a database via a mouse driven graphical interface.

DAMSL™ enables the user to modify the characteristics of a message and/or create new messages, in most cases, without having to modify the source code or recompiling the application.

DAMSL™ technology is currently used in the

- Aerosystems Generic Integrated Link Environment (AGILE)
- Network Control and Initialisation Data Preparation Facility (NCIDPF)
- JTIDS Situation Awareness Facility (JSAF)
- JTIDS Portable Capability (JPC)
- CAYMAN Datalink Operational Systems

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