

MilCAN matters

The deterministic protocol for CAN

Issue 2

1 June 2005

MilCAN meets MilVA

On May 11th 2005 an international symposium and exhibition was held in the picturesque town of Aachen in Germany. It was organised by the Military Vetronics Association (MilVA) featuring themes for "Land Forces 2010—Pragmatic Approach to Network Enabled Capabilities".

It was a very well organised and supported event hosted by the German Army School of Engineering.

Attendees came from a wide spectrum of companies and organisations including international MoD representatives in Land Systems.

The symposium was organised such that the conference presentations were coupled with an impressive exhibition.

Exemplary presentations were made on many of the key military vehicle projects with special reference to the importance of Network Enabled Capabilities and cooperation between international army forces.

Latest products, systems and technologies were demonstrated by numerous international companies and organisations including QinetiQ, Thales, Diehl BGT

Defence, Giat Industries, RAYDON, Intracom, CAE, KMW, Rhein Metal LS.

The MilCAN representation was led by the Vetronics Research Centre, University of Sussex. The demonstration involved an integrated vetronics validation testbed deploying primarily MilCAN (determinism), TTP/C (safety critical), and Ethernet/WLAN (multimedia). The demonstration also included an under-development dual redundancy MilCAN bus system and a VSI management and configuration tool .

Special emphasis on international collaboration was given to the VIVA project where British and German Land Systems joint efforts produced a successful prototype raw video transmission system over Gbit Ethernet for military vehicles.

Hans-Josef Maas, chairman of MilVA, paid special tribute to all exhibitors for their efforts in providing a highly successful event.

www.milva.org

www.milcan.org

Elias Stipidis
VRC, University of Sussex.



(From L-to-R), Bob Connor (chairman, MilCAN), Hans Maas (chairman, MilVA), and Elias Stipidis (vice-chairman, MilCAN) at the MilVA symposium

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20th MilCAN Meeting @ QinetiQ

A well attended 20th CANbus interface working group was held at the offices of QinetiQ, Farnborough in March.

11 different companies and organisations were represented with a definite international flavour with representatives from UK, Canada, and Sweden.

To ensure that the maximum benefit was gained from the two day meeting, the agenda was "streamed" so that the technical group could consider various issues including a number of change requests while the publicity group could focus on the promotion and communication of MilCAN activities including the next MilCAN Matters newsletter.

At various times during the meeting both groups convened together to report back, review actions and discuss joint items that

required the full working group to conclude.

With the growing awareness of MilCAN and participation of a wider community the policy for admitting new members was reviewed plus ways in which those interested in MilCAN could be engaged.

As an increasing number of projects and products were adopting MilCAN the subject of conformance was also considered by members.

Finally, there was time allocated to share knowledge and experiences gained by members, this was lead by the University of Sussex on information on Dual MilCAN Bus.

The next meeting will be held in September at Bofors Defence, Sweden.

Andrew Watson
Mil/Aero Business Unit , Deutsch Ltd.

ESTABLISH, MAINTAIN AND BROADEN THE USE OF MILCAN AS THE DEFINITIVE INTEGRATION STANDARD FOR MILITARY LAND VEHICLE SUBSYSTEM COMMUNICATIONS

**“MilCAN ...
was most
recently
implicitly
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the ITT for the
FRES
Electronic
Architecture
TDP”**

New User's Forum

A new web-based forum will soon be available for both members of the MilCAN working group and for non-members that are using or are interested about MilCAN. It will serve as a central point for discussions related to the MilCAN specifications, implementation queries, and general CAN issues related to MilCAN. The forum will be operated directly by the people involved with the development and maintenance of the specifications, providing as much possible help and support to new MilCAN users. Participation will be free for access to the general discussions and announcements. Members of the MilCAN Working Group will also have access to private forums used for discussions directly related with change requests and other pending/future modifications for the MilCAN specifications.

<http://forum.milcan.org>

MilCAN Spec Merger

A number of change requests have been raised and approved in recent MilCAN meetings forcing the need for an update to the MilCAN specifications. It was therefore decided that where possible the MilCAN A and MilCAN B specifications will be merged with the differences between the two protocols being highlighted.

As a result of initial analysis the following has been decided:

- MilCAN A & MilCAN B Physical Layer specs will be merged into one Specification entitled MilCAN Physical Layer.
- MilCAN A & MilCAN B Data Link Layer specs will be merged into one Specification entitled MilCAN Data Link Layer.
- The MilCAN A Application Layer Spec and the MilCAN B Application Layer spec are likely to remain independent.
- The MilCAN A System Management Layer Spec will remain applicable only to MilCAN A.

Bob Connor
QinetiQ Ltd

New MilCAN Membership Policy

At the last MilCAN meeting in March 2005, the members decided to implement a new membership policy. The MilCAN group had previously operated a fairly informal arrangement for the admission of new members and it was felt that a formal policy should be adopted. The following is a synopsis of the policy that was agreed by the members and will be implemented as of 1st May 2005:

The current membership will be frozen as of 1st May 2005

- 1) Members shall attend at least 1 meeting of the 2 meetings per year. Failure to attend for 2 consecutive meetings will normally result in membership of the group being revoked.
- 2) New members will be elected only if a current company membership has been revoked or if a company chooses to cease their membership.
- 3) New members will be by invitation from the current membership and will be based on one of the following:
 - a) A potential new member has been nominated and seconded by current members. The proposal to admit this new member has been voted on and passed by a majority at a MilCAN meeting.
 - b) A potential new member has been identified based on their participation on the MilCAN Users Forum (yet to be set up).

Chairman's Voice

Welcome to the second edition of MilCAN Matters.

A rationalisation of the MilCAN A & MilCAN B specifications is currently taking place with the aim to issue updated specifications shortly after the next meeting in September 2005. A report on this rationalisation is included elsewhere in this newsletter.

The membership of the group has also been discussed recently, resulting in a formal policy for gaining membership being stated. This formal policy will be published in full on the MilCAN website but a synopsis of this policy is included in this newsletter.

MilCAN was recently demonstrated by the University of Sussex at the MilVA symposium in Aachen Germany held 9-12th May 2005. The University of Sussex demonstrated a dual redundant version of MilCAN coupled with a VSI bridge and VSI configuration and network management tool.

MilCAN continues to be implemented within the Military Vehicle domain and was most recently implicitly referred to in the ITT for the FRES Electronic Architecture TDP.

The next MilCAN meeting will, for the first time since 2001, be held outside the UK. Bofors Defence have kindly offered to host the meeting in Sweden on September 20th & 21st 2005. The focus of this meeting will be to tackle the subject of MilCAN compliance.

Bob Connor
VSI Technical Leader
QinetiQ Ltd



(From L-to-R), Elias Stipidis (vice-chairman, MilCAN), Lois Nicholson (DSTL, FRES IPT) and Bob Connor (chairman, MilCAN) at the MilVA symposium

NATO Battlefield Target Identification for land battlespace combat identification has been defined by NATO STANAG 4579, which is a millimetric question and answer system. The importance of this equipment has been recognised internationally, with interoperable interrogation and transponder units being developed by companies in the USA, UK and France.

The MilCAN enabled UK Battlefield Target Identification Device (BTID) has been developed by Thales Missile Electronics (TME), and is designed for use as either a standalone transponder system or a platform integrated interrogator and transponder solution.

Three UK BTID systems have been purchased by FMV (Sweden) and are being installed onto three new (evaluation turret) variants of the CV9040 by Bofors Defence. QinetiQ acted as the lead contractor in this transaction and was also responsible for providing an interface between the BTID and the platform.

The TME BTID utilises a 1Mbps MilCAN A bus operating at a Sync rate of 512Hz, while the CV9040 platforms provide a 1Mbps MilCAN



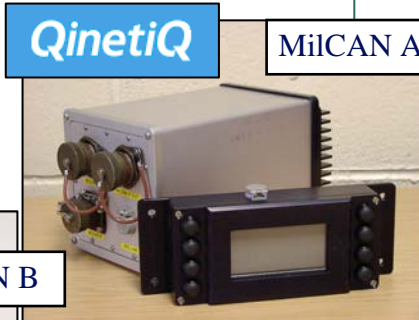
MilCAN B

B bus with a Sync rate of 256Hz.

QinetiQ's Vehicle Specific Interface Module (VSIM) provides a bridge between the two systems by means of a remote human interface located within the platform (for full functional control and configuration of the BTID) whilst also providing a simplified message interface to the platform's integrated sighting and triggering systems.

QinetiQ successfully integrated the first system into the platform at Bofors in May 2005.

Guy Weatherhead
QinetiQ Ltd



MilCAN A

MilCAN Projects



"The MilCAN enabled UK Battlefield Target Identification Device (BTID) ..."

MilCAN goes to Rome!

The 10th International CAN Conference, organised by CAN in Automation was held in Rome on 8th - 10th March 2005. It was spread over three days, with workshops running on the first day and the paper presentations scheduled for the remaining two days. Attendees ranged from semiconductor industry representatives to educational establishments.

The conference focused on physical layer and data link layer implementations as well as on network redundancy and network topologies. There was also practical experiences reported dealing with vehicle applications.

Two representatives from the MilCAN user group member organisations attended the conference to promote the use/knowledge of MilCAN. Abdul Qabaz from BAE Systems Land Systems presented a paper, entitled, 'Implementation of MilCAN on a Main Battle Tank'. The paper detailed the first implementation of MilCAN on a UK military vehicle. The Challenger 2 Main Battle Tank has been integrated with new technologies communicating via a MilCAN Bus to improve the vehicle Commander's Situational Awareness (SA).

It demonstrated that MilCAN is finally being used for its original purpose i.e. military vehicles.

With the majority of the other presentations related to automotive applications, the presentation received considerable interest with its military application.

George Valsamakis from the University of Sussex also presented a paper, entitled, 'Management and Configuration for MilCAN Vetric systems'. The objectives of the work presented were to provide intelligent means of connectivity for integrating diverse network technologies, and tools for configuring and monitoring military vehicle electronic systems.

Both presentations were well received and for the third year running, members of the MilCAN User Group have maintained a MilCAN presence at the annual CAN conference. Discussions have already commenced on potential MilCAN topics, which could be presented at the conference next year!

Abdul Qabaz
BAE Systems Land Systems



VRC demonstration at MiVA (Dual MilCAN bus with TTP/C)

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