VSI Benefits to Industry

Presented by Mark Carter

BAE Systems

(On Behalf of the VSI steering Group)

So what are the benefits?

- Provides an across industry, academia and MOD ENGINEERING forum to develop and agree standards and guidelines for the integration of electronic systems into UK military vehicles.

- Engineers from the participating companies working together to agree best practise, unburdened by competition

- Provides confidence that industry developed products can be readily integrated
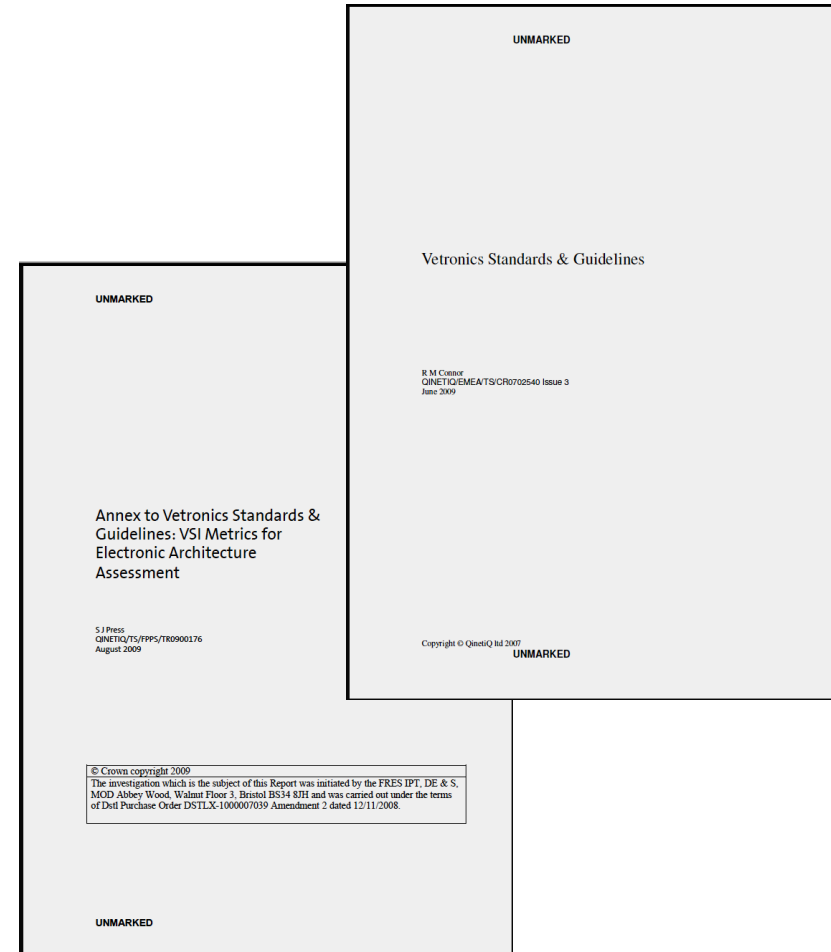
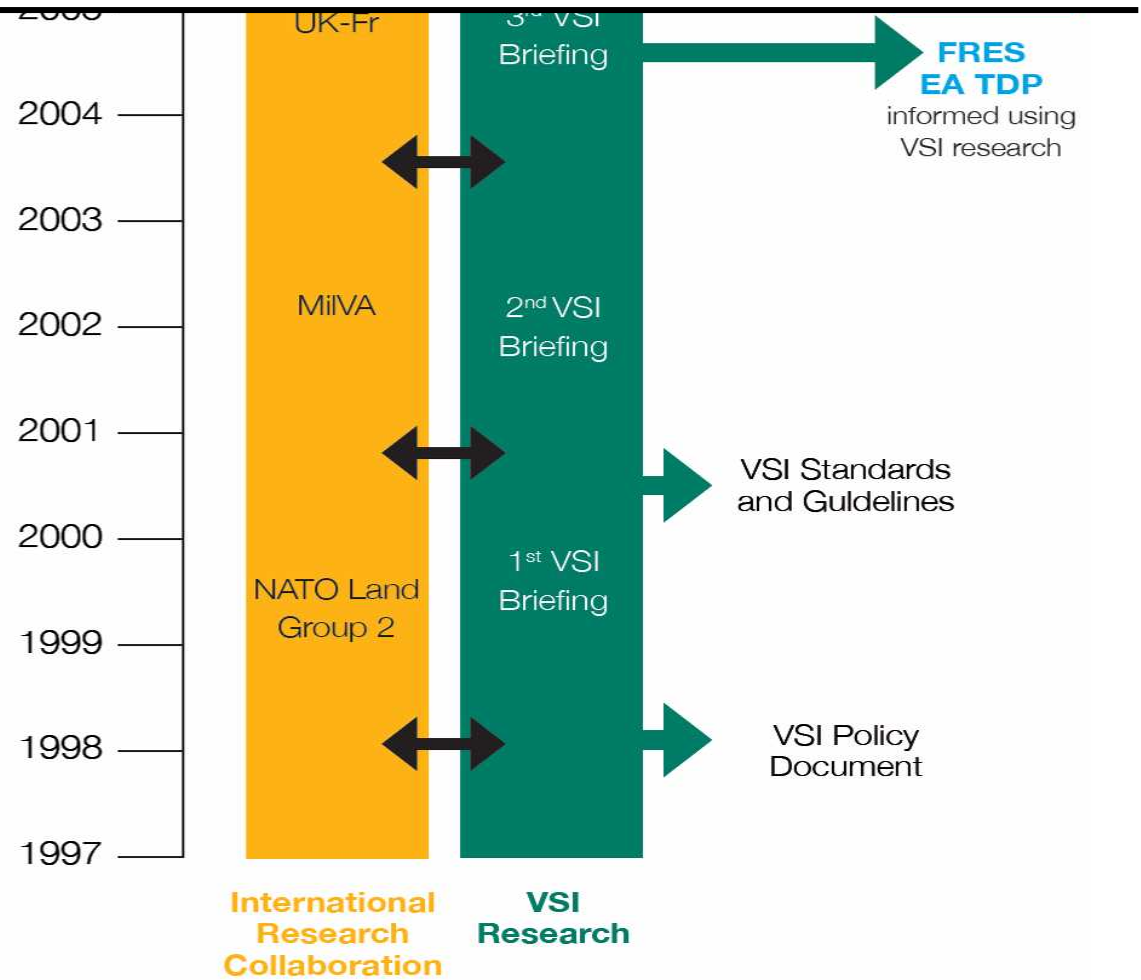**VSI** ← Briefing Day
Vehicle Systems Integration

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Engineers

Not just a talking shop

- **Internationally recognised standards and guidelines**
- **Agreed Metrics for assessing the quality of the electronic architecture**
  - Openness
  - Scalability
  - Reconfigurability
  - Enhanceability
  - Integration
  - ILS

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Vetronics Standards & Guidelines

R M Connor
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Annex to Vetronics Standards & Guidelines: VSI Metrics for Electronic Architecture Assessment

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VSI Timeline

- Standards and guidelines published
- VSI web site launched
- Links to international research
- Underpinned FRES EA TDP
- Informed the GVA standard

	International Research Collaboration	VSI Research
2005	UK-Fr	3rd VSI Briefing → FRES EA TDP informed using VSI research
2004		
2003		
2002	MilVA	2nd VSI Briefing
2001		→ VSI Standards and Guidelines
2000		1st VSI Briefing
1999	NATO Land Group 2	
1998		→ VSI Policy Document
1997		

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International Research Collaboration

- **Military Vetronics Association (MilVA)**
  - Europe-wide Vetronics group
  - Provides ratification of Vetronics STANAGs
- **France – UK**
  - International Cooperation on Vetronics research including Message Data Model
- **Germany – UK**
  - International Cooperation on Video Interface Vetronics Application (VIVA) leading to Def Stan 00-82

- **International Collaboration supports UK industry interoperability with NATO partners**

Industry Programmes informed by VSI research

- TRACER
  - CAN protocol, Architectural approach
- TERRIER
  - VSI compliant MilCAN and Architecture design
- FRES EA TDP
  - Architectural approach and evaluation metrics
  - Supports FRES SV
- VTID
  - VSI compliant modular and scalable system
- Generic Vehicle Architecture
  - First Defence Standard for land platform Vetronics integration
- LPPV (Ocelot)
  - First instantiation of GVA including the Common data model

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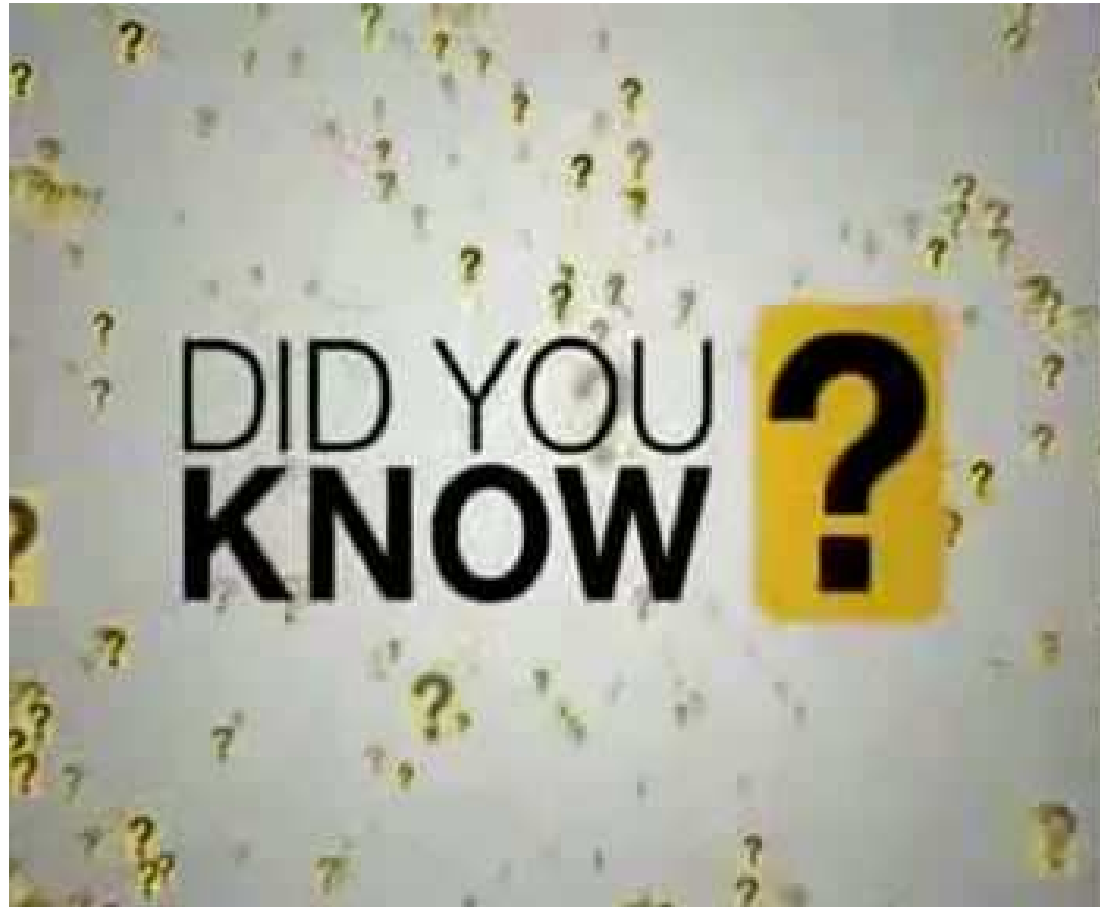# Engagement with Academia

- **Vetronics Research Centre, University of Sussex**
  - Independent MilCAN test authority
  - Drive by wire research
  - Systems Integration and Vetronics Verification and Validation

- **University of York**
  - Modular Safety Case

Research

- Current
  - Middleware Data Distribution Service; DDS
    - Industry agreed Land Data Model
    - Underpins GVA
  - Video over Ethernet Def Stan 00-82
    - Industry agreed video over Ethernet standard
    - Underpins GVA
- Future
  - Continue to mature the Land Data Model, and Def Stan 00-82
  - Develop Safety and Security standards
    - Time Triggered Ethernet Protocol

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Did you Know?

Conclusion

- VSI has provided industry with a valuable forum for agreeing the standards and guidelines for the integration of electronic systems into UK military vehicles.

- VSI provides UK industry with an interface into the NATO working groups to influence the emerging international interface standards

- Industry is given confidence that their products can be readily integrated in future land vehicles both in the UK and international markets

- VSI must continue as a forum to develop the underpinning interface technologies to support GVA and to enable the UK to exploit the exponential growth in vehicle sensor and computing capabilities

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