Minutes of the Technology Group, 25 January 2011

BIS Conference Centre, 1 Victoria Street, London, SW1

Attendees:

Jerry Hardcastle, Nissan (Chair)
John Batterbee, ETI
Catherine Coates, EPSRC
John Cooper, BP
David Densley, Scottish and Southern
Robert Evans, CENEX
Erik Fairbarn, Infracharge
Nick Fell, TATA
Neil Fraser, Mahle
Miguel Fragoso, Millbrook
Steve Faulkner,
George Gillespie, MIRA
Brian Gush, Bentley
Tony Harper, JLR
Graham Hoare, Ford
David Hytch, Greater Manchester PTE
Allan McKenzie, SMMT
Theo Quick, Logica
Tony Spillaine, SAIC
Stephen Stacey,
Hamid Tavassoly, OLEV
Yung Tran, SMMT
Henri Winand, Intelligent Energy
Bob Lonnon, Secretariat, BIS
Jon Maytom, BIS
Andrew Everett, TSB

Additional Attendees:

Richard Bruges, Unipart
Catherine Hutt, SMMT
Brendon Horrocks, Ford
David Yuill, BIS

Apologies:

Jon Beasley, GKN
Bernhard Blaettel, BMW
Brian Collins, DfT/BIS
Andrew Graves, University of Bath
Neville Jackson, Ricardo
John Miles, ARUP
Charles Morgan, Morgan
Don Newton, Axeon
Jim Sumner, Optare
Simon Wood, Lotus
Ashley Roberts, BIS

Agenda Item 1: Welcome and Introduction: Chair Jerry Hardcastle

The Chair welcomed members to the first meeting of 2011 highlighting that this year the focus was very much focussed on deliverables. Chair welcomed Catherine Hutt from SMMT presenting on the EV Group, and Gordon Horrocks from Ford.

Agenda Item 2: SMMT EV Group Report: Catherine Hutt Presented Paper TG 250111.01

During the discussions the following points were made:

- Low Carbon Vehicles are also included within the Electric Vehicles remit, with a number of Council members actively engaged
- 2011 plans include developing focus on low carbon commercial vehicles
- Chair flagged the importance of maintaining engagement with this SMMT working group and noted the standardisation goals. Request that SMMT EV Group keep Technology Group informed of strategic targets and activities to avoid excessive overlaps
- Secretariat to be point of Liaison with this EV Group, and invite to TG meetings as appropriate.

[ACTION 1: SMMT to provide an Organogram on EV working]

Agenda Item 3.1: 19th January Supply Chain Workshop Headline Outputs: Bob Lonnon Presented paper TG250111.02

During the discussions the following points were made:

- Need to promote the 'Technology Road Maps' at every opportunity.
- Potential to align procurement specifications to provide more consistent guidelines to suppliers avoiding any competition issues.
- Potential for OEM's to work with suppliers, regarding rare elements in respect to new/emerging technologies. Chair to discuss with joint Technology and Supply Group representative for closer liaison [**ACTION 2:** Chair to discuss with joint Technology and Supply Group representative for closer liaison].
- Potential for closer working between OEMs and suppliers, to build a 'bridge' regarding standards, product needs and materials – using the TRL paper as an example to provide common gateways
- LCVT1 discussed as a means to brigade smaller companies to T1 footprint to access OEMs – Good progress to date
- EPSRC identified that they could often signpost the automotive sector new relevant technologies – eg. 'Coatings'.
- Suppliers need to engage with purchasing decision makers ie. companies' international corporate buying centres - good knowledge of standards key

[**ACTION 2: Chair to discuss with joint Technology and Supply Group representative for closer liaison]**

Agenda Item 3.2: TIC's

- 3.2.1 Low Carbon Mobility: Tony Harper Presented Low Carbon Mobility Paper: TG2501.321

- 3.2.2 Low Carbon Mobility: George Gillespie Presented Future Transport Systems Paper: TG2501.322

During discussions the following points were made:

- Timelines very short - automotive sector work under NAIGT and Automotive Council has provided a head start
- Presentations well received
- Need to talk with other sectors concerning 'low carbon mobility'
- TSB confirmed that Input from the Automotive Council would carry significant weight with in respect to TIC formation processes. Meeting endorsed a unified approach from Automotive Council TG to TSB with individual companies encouraged to approach TSB as appropriate

[**ACTION 3: Chair to submit a return from the Technology Group to TSB before 31 January deadline based on presentation material] [Action Complete]**

Agenda Item4: Workstream Updates

4.4.1. Technology Roadmaps & Test-Bed UK – Final Clearance Nick Fell Presented Paper TG2501.441

During the discussions the following points were made:

- The Commercial Vehicle and Off-Highway Roadmap was approved. The Chair requested this be presented for formal ratification at the Full Council for approval and upload to Automotive Council website

[ACTION 4: Secretariat to forward the Commercial Vehicle and Off-Highway Roadmap to the Full Council]

4.4.2: OEM/Supplier R&D Inward Investment: John Batterbee Presented Paper TG2501.442

- No time to include full discussion. Chair directed inclusion for next meeting.

[ACTION 5: Secretariat to include paper TG2501.442 **in next TG meeting for discussion]**

Agenda Item5: Chair's Conclusion

The Chair reprised the important action on TICs, confirming that Technology Group would write to TSB before 31 January with a paper.

Agenda Item: AOB

FP7 Transport Skeleton issued.

The meeting closed at 12.30
Automotive Council Secretariat

Summary list of actions

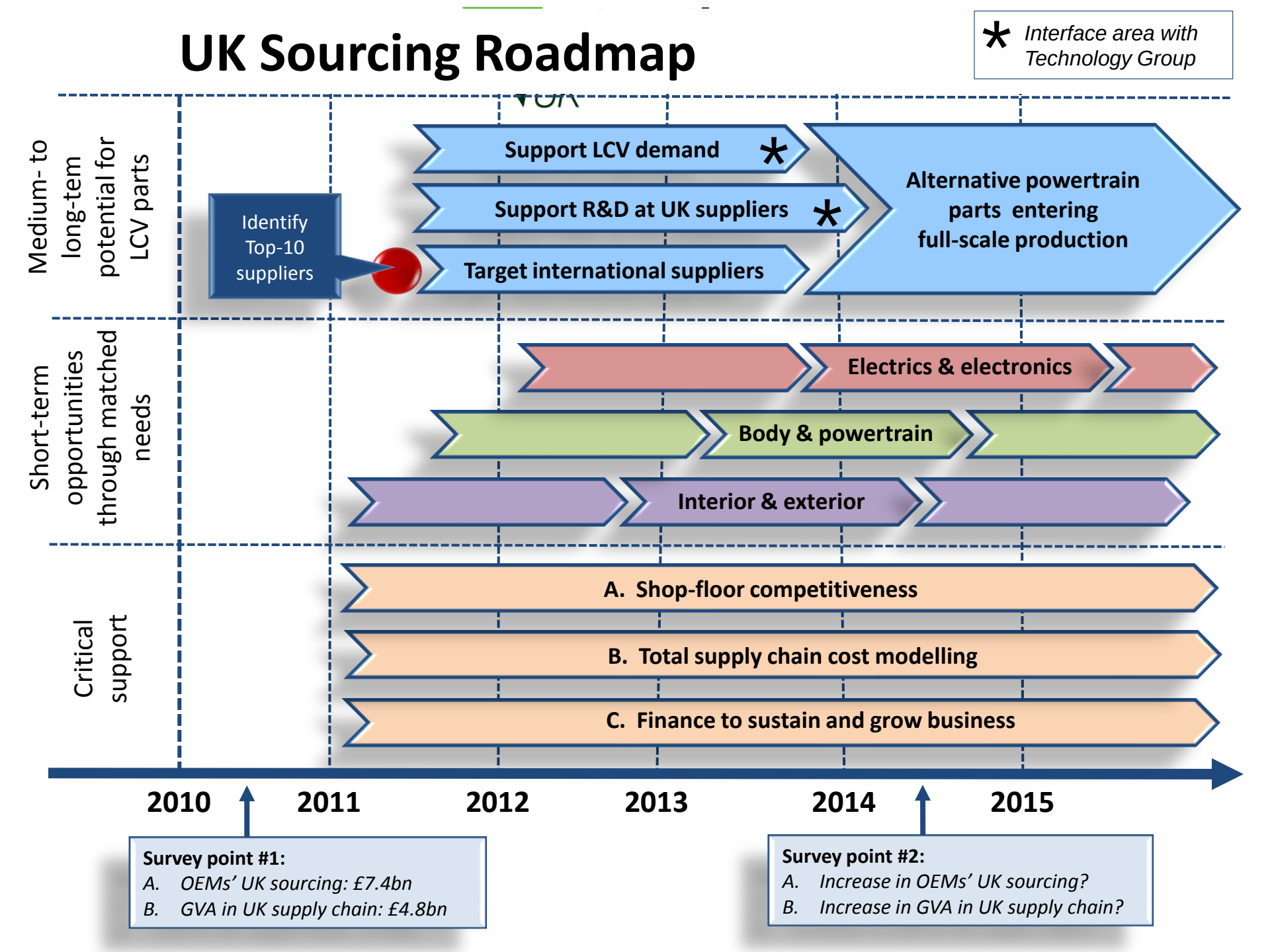
Action	Responsibility	Deadline

ACTION 1: SMMT to provide an Organogram on EV working	**SMMT**	ASAP
ACTION 2: Chair to discuss with joint Technology and Supply Group representative for closer liaison	**Chair**	TBC
ACTION 3: Chair to submit a letter from Automotive Council to TSB before 31 January deadline using presentation material presented	**Chair**	**Action Complete**
ACTION 4: Secretariat to forward the Commercial Vehicle and Off-Highway Roadmap to the Full Council	**Secretariat**	28 February
ACTION 5: Secretariat to include paper TG2501.442 in next TG meeting for discussion	**Secretariat**	23 March

Sourcing Roadmap Report

19 January Workshop to Create Consensus for 2011 Supply Chain Deliverables

UK Sourcing Roadmap



Supply Chain Development Alerting and Reaching the UK Supply Chain

- **Session 1 -** Medium and Long Term - How can the UK access future opportunities? - referencing the Automotive Council technology roadmaps and "sticky technologies”
- **Session 2 -** Short Term - How can the UK access today's demand from OEMs
- **Session 3** - How to help suppliers win business e.g. Cost Modelling

Workshop: The Consensus Points & Main Ideas

- Promote the Technology Roadmaps … “the best kept secret”
- Promote UK capability to OEMs & T1’s
- Work with other Sectors to look at what technologies they have…e.g. Aerospace; Energy Storage; Electronics; Motorsports; etc
- LCVT1 and/or T1 engagement to industrialise high growth potential technologies
- Role for TICs, KTNs with TSB & Industry

Technology Group: Discussion points

- Role of the Technology Group to take this forward
- How do these themes correlate with current TG agenda?
- Quick wins?

Technology & Innovation Centres

Technology & Innovation Centres

- Executive Summary
- What Is a Technology & Innovation Centre?
- What Should Be The Automotive Council Technology Group's Priorities Be?
- How Well Aligned Are The Current TIC Proposals To AC Priorities?
- What Would A More Aligned Proposal Look Like?
- Would Such A Proposal Have Cross-Sector Relevance?
- Where Can The Public Money/TICs Add Most Value?

Technology & Innovation Centres

automotive council UK

Draft For Discussion

- Executive Summary – points for discussion and agreement
  - > The Automotive Council Technology Group has already established the 5 key technology priorities for Automotive Innovation And Growth.
    - Energy Storage & Management, Electric Motors & Power Electronics, Internal Combustion Engines, Lightweight Vehicle & PT Structures, Intelligent Mobility.
  - > The Automotive Council Technology Group with the Technology Strategy Board have, through the UK Capability Study, identified particular areas within these technology groups where the UK has the potential for significant return on investment (Public and Private).
  - > The NAIGT report called for a significant increase in support for collaborative R&D in these areas (to circa £100M pa). The Technology & Innovation Centres could represent a positive step in that direction and be a tangible R&D asset of the 'Test-bed UK' concept ***if*** conceived correctly.
  - > At first sight, from the information available, the proposed initial list of Technology and Innovation Centres in general and the High Value Manufacturing proposal in particular are a poor fit to these technology areas and, therefore, represent a potentially missed opportunity.
  - > The proposal for a Future Transport Systems Technology & Innovation Centre by MIRA, Coventry University and Innovits is a good fit to the Intelligent Mobility priority and the high ROI areas within it and as such is endorsed as a proposal by this group.
  - > The other 4 key technologies could be considered in a wider context as "Low carbon Mobility Technologies" and as such have high levels of interest to other sectors. We, therefore, advocate that we enter into an urgent period of consultation with TSB/BIS on how the concept of a 'Low Carbon Mobility Technologies' TIC could be developed in support of the NAIGT vision and with strong x-sectorial relevance.

Technology & Innovation Centres

What Is a Technology & Innovation Centre?

Draft For Discussion

- A technology and innovation centre will be a physical centre with substantial investment to establish world-leading capability and global impact, in pre-commercial development. It will provide access for business to the best technical expertise, infrastructure, skills and equipment that would otherwise be outside the reach of individual companies. A centre will provide an environment in which multi-disciplinary teams from a diverse range of backgrounds can work together.
- A technology and innovation centre will:
  - provide businesses with access to world-leading technology and expertise.
  - reach into the knowledge base for world-leading science and engineering be able to undertake collaborative applied research projects with business.
  - be able to undertake contract research for business.
  - be strongly business-focused with a highly professional delivery ethos.
  - create a critical mass of activity between business and the knowledge base.
  - provide skills development at all levels.

Technology & Innovation Centres

What Is a Technology & Innovation Centre?

Draft For Discussion

- The TSB are proposing a network of strong centres that:
  - attract work from a wide cross section of businesses ranging from multinationals to small businesses
  - have the prestige to work closely with the best universities and other technology organisations in the UK and internationally
  - are recognised as a mark of excellence in the UK and aspire to be the best in Europe and the rest of the world
  - share expertise between the centres and across the wider knowledge base.
- Initial list of candidate areas:
  - High value manufacturing
  - Energy and resource efficiency
  - Transport systems
  - Healthcare
  - ICT
  - Electronics, photonics and Electrical systems

Technology & Innovation Centres

What Is a Technology & Innovation Centre?

Draft For Discussion

- Proposal Assessment Criteria
  - The potential global markets which could be accessed through the centre are predicted to be worth billions of pounds per annum
  - The UK has world-leading research capability
  - UK business has the ability to exploit the technology and make use of increased investment to capture a significant share of the value chain and embed the activity in the UK
  - Technology and innovation centres can enable the UK to attract and anchor the knowledge intensive activities of globally mobile companies and secure sustainable wealth creation for the UK
  - Technology and innovation centres should be closely aligned with, and essential to achieve, national strategic priorities.

Technology & Innovation Centres

What Is a Technology & Innovation Centre?

Draft For Discussion

automotive council UK

- High Value Manufacturing TIC
  - > We (TSB) are proposing that the first centre we establish will be in high value manufacturing. Manufacturing is one of the primary ways we create wealth from new technologies and the UK is the sixth largest manufacturer in the world by Gross Added Value (GVA). High value manufacturing is a key strand of the Government's investment in growth, and a key priority area for the Technology Strategy Board. It is anticipated that a centre in manufacturing is likely to be formed of a consortium that recognises a broad, cross-sector approach to high value manufacturing; embracing all forms of manufacture using metals and composites, in addition to process manufacture including bio-processing, in line with our strategy. We are confident that a centre can provide an early contribution to economic recovery and growth, and there is already demonstrable business demand for applied research services reaching into a world-leading UK research base.

Technology & Innovation Centres

What Should Be The Automotive Council Technology Group's Priorities Be?

Draft For Discussion

- Energy Storage & Management
- Electric Machines & Power Electronics
- Internal Combustion Engines
- LW Vehicle & PT Structures
- Intelligent Mobility

- From an Auto Council perspective, we should start from the, already identified 5 key technology themes.
- We also have the UK capability study that identifies technology areas with a high potential for return on investment and where the UK has the potential to win.
- The following slides identify the technologies that have a high (>=4) ROI index (out of 5) binned by the 5 technology themes.

Technology & Innovation Centres

What Should Be The Automotive Council Technology Group's Priorities Be?

Draft For Discussion

- UK Capability Study – Technology areas with ROI >= 4
  - Internal Combustion Engine
    - Fuel Injection Equipment
      - Rationale:
        - Good existing capability, with global FIE suppliers performing R&D in UK to meet needs of Roadmap
        - Manufacturing is also performed, however not for passenger car systems
    - Engines for special duty cycles
      - Rationale:
        - UK well-placed to deliver requirements of Roadmap from short term, with required expertise and manufacturing capacity for niche products all present
        - Relatively low assumed R&D activity level required
    - Integrated design & development
      - Rationale
        - Evidence gathered suggests roadmap requirements will be met
        - Complexity of activities is high, but established expertise and running programmes already in place.
        - High potential for value capture, especially in high volume manufacturing, with OEMs and consultancies present with required capabilities.

Technology & Innovation Centres

What Should Be The Automotive Council Technology Group's Priorities Be?

Draft For Discussion

- UK Capability Study – Technology areas with ROI >= 4
  - > Electric Machines & Power Electronics
    - Hydrogen Fuel Cells
      - Rationale
        - Large number of publicly funded projects (broad spread from fundamental research to vehicle applications)
    - Electric motors for lower cost & higher efficiency
      - Rationale:
        - Good fundamentals in place and several players, medium level of activities required to deliver to product roadmap
        - Good potential for UK to capture value over entire value chain
    - Power Electronics
      - Rationale
        - Good R&D presence and manufacturing capability, medium level of activity required to deliver to product roadmap
        - Power electronics are an important aspect of alternative propulsion systems and UK in a good position to capture value .

Technology & Innovation Centres

What Should Be The Automotive Council Technology Group's Priorities Be?

Draft For Discussion

- UK Capability Study – Technology areas with ROI >= 4
  - > Energy Storage & Management
    - Battery pack & Integration
      - Rationale:
        - Strong capability in UK for battery pack and integration so low levels of on-going activity required to deliver to product roadmap
        - Overall value generation potential for pack development and integration is less than that of battery cell technology but UK is well positioned to capture value.
    - Mechanical energy storage devices.
      - Rationale:
        - Leading capability in UK (flywheels), medium level of activity required to deliver to product roadmap to prove concepts & continue advanced research to maintain and further expand high expertise level
        - Good potential for UK to capture value through licensing technology, consulting and manufacture.
    - Optimised vehicle & energy management
      - Rationale
        - Good existing UK capability, activities required to deliver to product roadmap low but value capture potential medium-low. Suppliers, OEMs and consultancies active in this area, strong in software but weaker in hardware, potential for consulting and niche vehicle development

Technology & Innovation Centres

What Should Be The Automotive Council Technology Group's Priorities Be?

Draft For Discussion

- UK Capability Study – Technology areas with ROI >= 4
  - Lightweight Vehicle & PT Structures
    - Lightweight vehicle structures & components
      - Rationale:
        - Potential for high value capture through existing leading R&D and manufacturing capability from niche & premium OEMs, as well as many suppliers
        - Priority activities are commercialisation of lightweight products & optimisation of manufacturing processes.
  - Intelligent Transport Systems
    - Driver Information Systems
      - Rationale
        - High level of industry based activities reported, medium level of activities required to deliver to product roadmap
        - Strong in R&D through academia, consultancies, suppliers and OEMs, potential to capture value through licensing / consulting
        - Risk that internet in vehicle may change the market for these systems

Technology & Innovation Centres

What Should Be The Automotive Council Technology Group's Priorities Be?

Draft For Discussion

- UK Capability Study – Technology areas with ROI >= 4
  - > Intelligent Transport Systems cont …
    - Intelligent Transport Systems
      - Rationale:
        - Activities required to deliver to product roadmap medium-high but significant UK capabilities developing in this area with potential for value capture in the medium-long term
        - Progress in ITS will require cooperation between different sectors: automotive, telecoms and government (infrastructure) and definition of common protocols and standards
  - > Other
    - Electrical Infrastructure
      - Rationale:
        - High level of activity required to meet product roadmap but significant local hardware (in-home e.g. smart metering, public charging points) and grid systems & strategies required to deliver. UK well placed to capture this value
        - There is a risk that the breakthroughs required in energy storage technologies to move EVs/PHEVs etc. to mass market are not made and therefore value potential of electrical infrastructure requirements is significantly reduced.

Technology & Innovation Centres

What Should Be The Automotive Council Technology Group's Priorities Be?

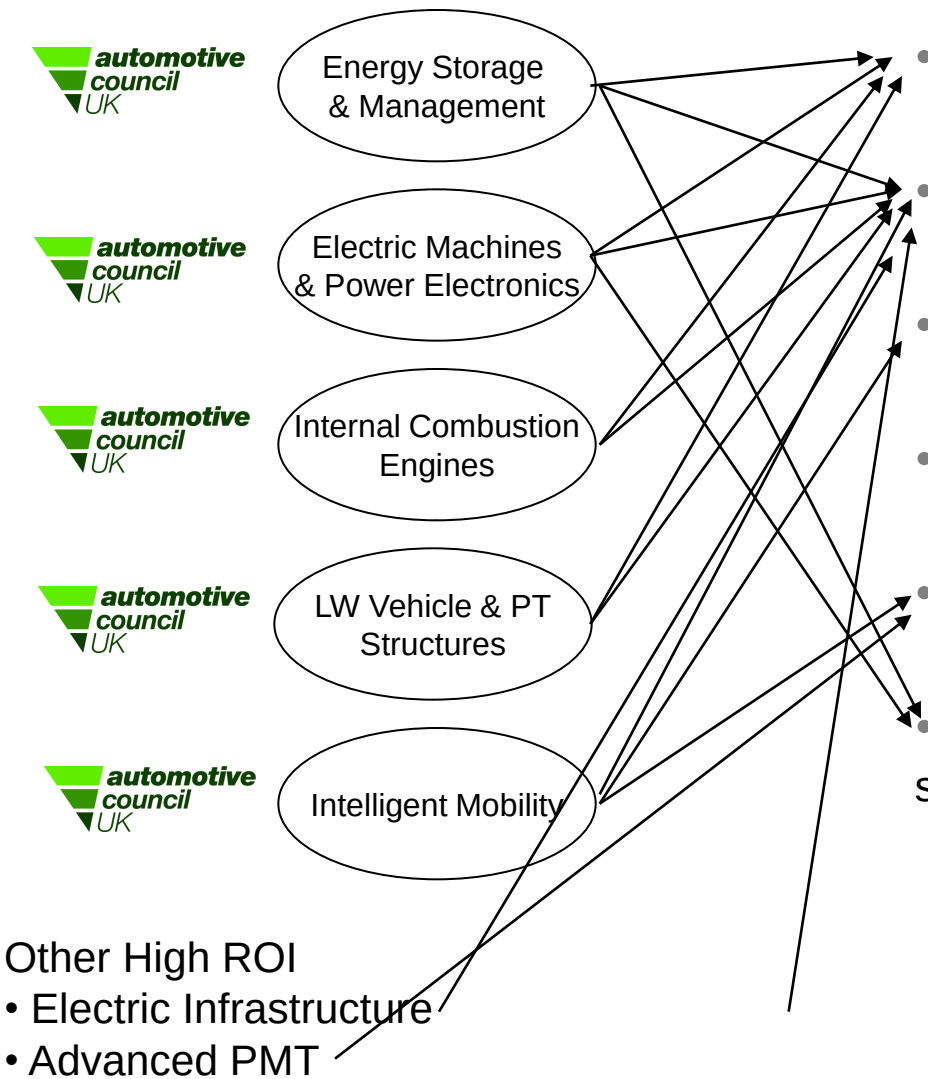
Draft For Discussion

- UK Capability Study – Technology areas with ROI >= 4
  - > Other cont…..
    - Advanced Processes & Tools
      - Rationale
        - Highly competitive starting base with a high level of activity and expertise within the UK, with existing market routes
        - Increasing role of advanced development tools in future, with high value capture potential for cutting edge products & services
        - Tool development activities are relatively low cost if carried out in parallel with associated technology development activities

Technology & Innovation Centres

How Well Aligned Are The Current TIC Proposals To AC Priorities?

Draft For Discussion



Other High ROI
- Electric Infrastructure
- Advanced PMT

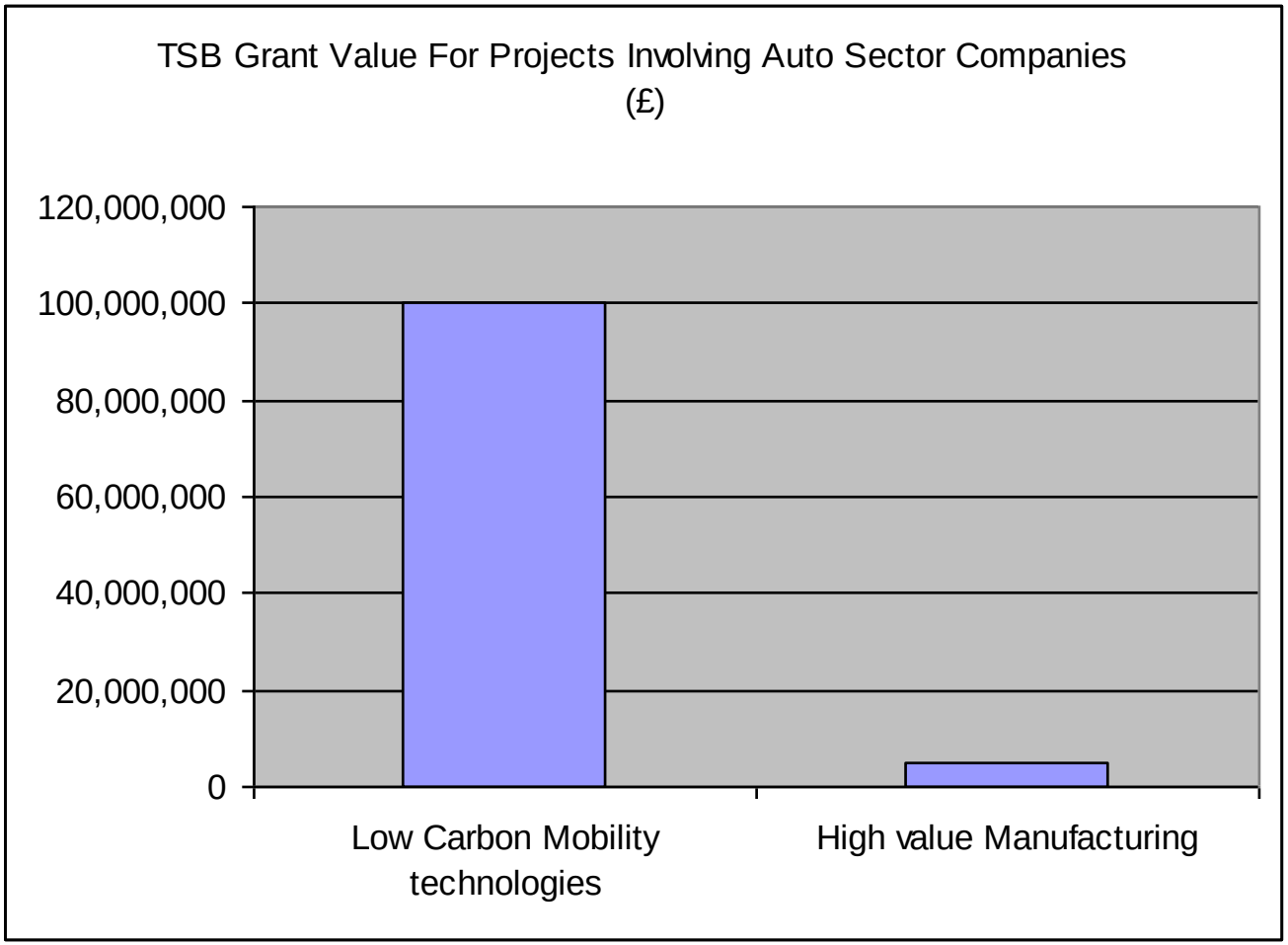
There appears to be poor alignment Between the Auto Council priorities And the proposed list of initial centres. This is particularly true if the intent of the HVM TIC is biased toward high-tech manufacturing production processes.

Technology & Innovation Centres

How Well Aligned Are The Current TIC Proposals To AC Priorities?

Draft For Discussion

- Evidence from today's collaborative R&D activity shows that Automotive companies are involved in more Low Carbon Technology projects than High Value Manufacturing* projects by a factor of twenty..

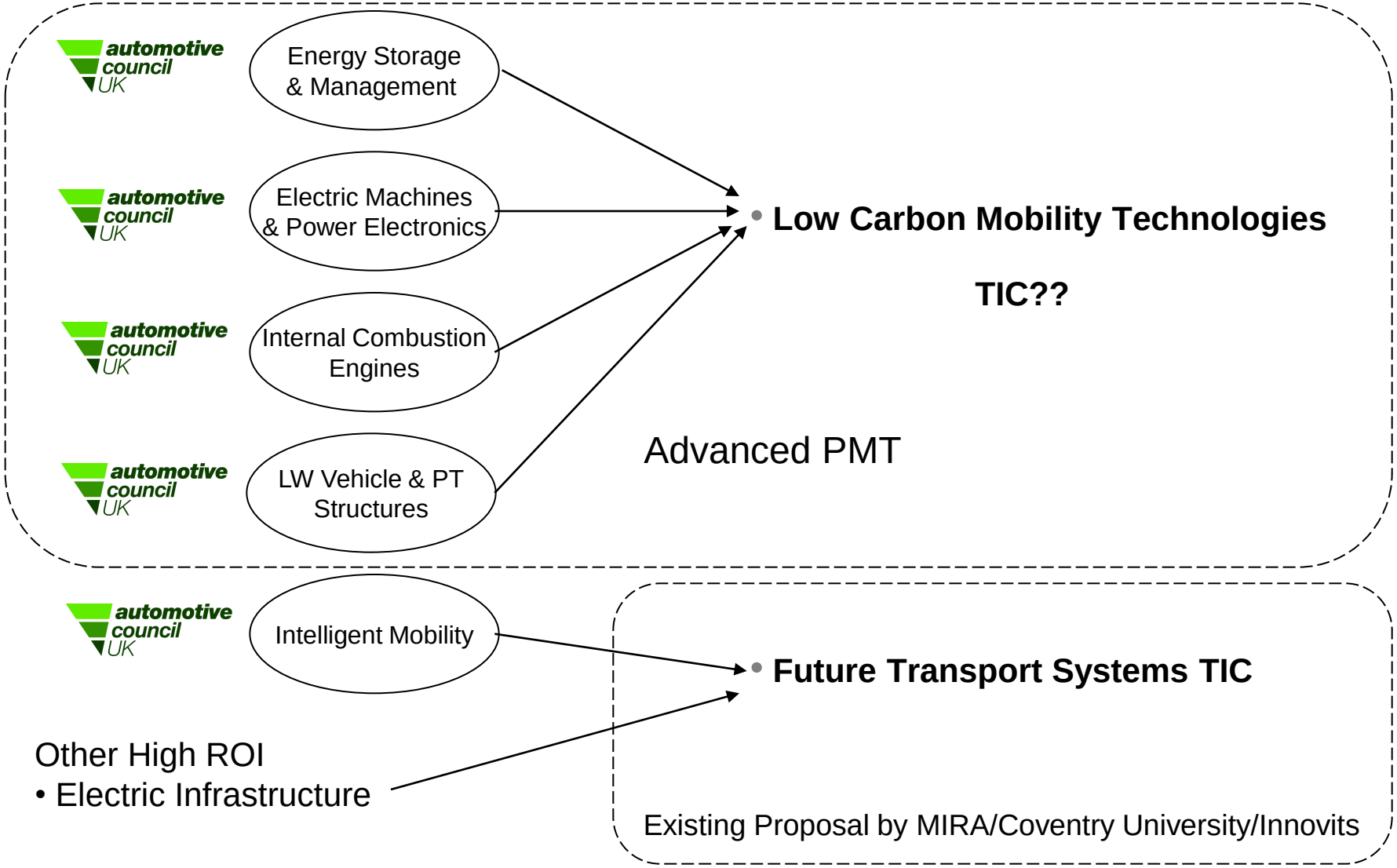


* using the current TSB definitions.

Technology & Innovation Centres

What Would A More Aligned Proposal Look Like?

Draft For Discussion



Technology & Innovation Centres

Would Such A Proposal Have Cross-Sector Relevance?

- Cross-sector support/Relevance for Low-Carbon Mobility Technologies and Intelligent Mobility.

Technology Theme	Passenger Car & Light Duty Commercial	Heavy Duty Road	Off Highway	Motorsport	Marine	Rail	Defense
Energy Storage & management	++	+	++	++	++	++	++
Electric Machines & Power Electronics	++	+	++	++	+	++	++
Internal Combustion Engines	++	++	++	++	++	+	++
Lightweight Vehicle & PT Structures	++	+	+	++	++	+	++
Intelligent Mobility	+	++	++	+	+	++	++

- Passenger & Light-Duty commercial position confirmed through Auto Council Technology Group
- Motor Sport Position endorsed through discussion with MIA (Motorsport Industry Association)
- Other positions are estimated.

Surface Transport offers an opportunity for cross sector innovation

Key Sector Challenges:

Road

Efficient production
Safety/crash protection
Infrastructure funding

Electrification
Energy storage
Powertrain efficiency
Intelligent Control (ITS)
Carbon footprint

Robust signals
Asset utilisation
Increasing capacity

Rail

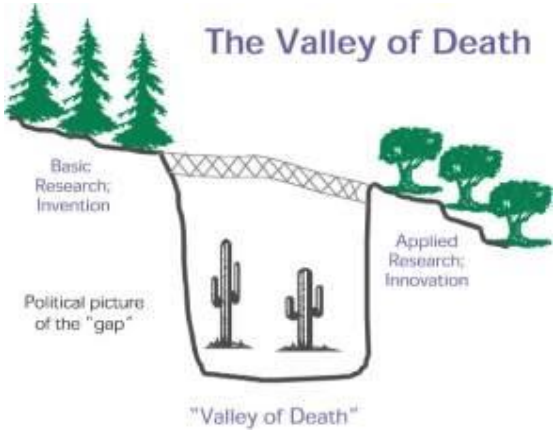
Navigation
Security
Automation

Marine

TIC's Adding Value to the Commercial R&D Community

automotive council UK

- TIC's offer an excellent opportunity to commercialise marketable research emerging from UK Universities
- With the right Industry engagement, a TIC could also provide access to a broad range of existing world class skills and facilities in the UK
- TIC's could also build UK capability in new or strategic areas where there are gaps in existing UK competence
  - > e.g. intelligent transport, prototype battery cell build/development
- A key strength in the UK is the independent Automotive R&D sector
  - > It would not be appropriate for Government funding to support investment in organisations & facilities that compete with existing UK based commercial R&D companies



LOTUS ENGINEERING

RICARDO

MIRA

TRL

MAHLE Powertrain

prodrive

Technology & Innovation Centres

Draft For Discussion

- Proposal Assessment Criteria – How would ‘Low Carbon Mobility Technologies’ and ‘Future Transport Systems – Intelligent Mobility’ shape up?
  - > The potential global markets which could be accessed through the centres are predicted to be worth billions of pounds per annum
  - > The UK has world-leading research capability
  - > UK business has the ability to exploit the technology and make use of increased investment to capture a significant share of the value chain and embed the activity in the UK
  - > Technology and innovation centres can enable the UK to attract and anchor the knowledge intensive activities of globally mobile companies and secure sustainable wealth creation for the UK
  - > Technology and innovation centres should be closely aligned with, and essential to achieve, national strategic priorities.

Future Transport Systems
Technology and Innovation Centre

A proposal for consideration by:

innovITS Coventry University MIRA

There is a growing need for joined-up thinking around our future transport systems….

'the key to intelligent mobility lies in the interconnections which can be made between a range of different industries and technologies'

Source: The **Automotive Council** in their forthcoming ***Intelligent Mobility: A National Need*** report

Proposed Future Transport Systems TIC

- It is proposed to create a Technology and Innovation Centre (TIC) focused on Future Transport Systems (FTS) which will:
  - Bring together the UK leading players in intelligent mobility transport technologies to create a world class delivery platform to **commercialise** the output of the research programmes – bridge the 'valley of death'.
  - Create a UK Future Transport Systems cluster to connect organisations active in automotive, freight, rail, marine, infrastructure, defence, off-highway and telecommunications sectors.
  - Consolidate our current **national strengths** in the fields of fixed and mobile communications technologies, software systems; and information services
  - Provide access to key partners expertise and facilities and coordinate their deployment on strategic TIC programmes

Proposed Future Transport Systems TIC (contd)

- It is proposed to create a Technology and Innovation Centre (TIC) focused on Future Transport Systems which will:
  - Establish the Future Transport Systems Institute within the planned **£250m** expansion of **MIRA Technology Park**, to form the national epicentre of a UK transport systems cluster - (*Founding principle of MIRA is to provide the automotive industry with cost effective secure access to high value assets, both testing facilities and engineering services, delivered through a not for profit company*)
  - Build upon the activities of the **£10m innovITS ADVANCE facility** which is also located at MIRA Technology Park
  - Build upon the world-class research expertise and facilities in automotive, telecommunications and design at Coventry University; including access to its new **£60 million Engineering and Computing facility** currently in construction and focused on providing business led solutions

Intelligent Transport Systems (ITS)

- Intelligent Transport Systems technologies will be integral to the FTS TIC:
  - A key function of the TIC will be to take a systems approach to the consolidation of UK ITS activities and capabilities and provide the strategic direction and co-ordination needed to ensure effective **commercialisation and global market exploitation** of ITS research to benefit our transport systems, product manufacturers and users
  - Significant investments have already been made through funded research programmes and the creation of Europe's first ITS test facility, 'innovITS ADVANCE'

FTS TIC - Concept

- The FTS TIC will undertake R&D, knowledge transfer, exploitation and commercialisation activities in:
  - Multiple methods of transport (land, air and water);
  - Multi-modal transport (the integration of different methods);
  - Logistics (including fleet management and transport integration);
  - Novel transport technologies (including communications, control, digital systems and autonomy)
  - Consumer driven mobile data device based applications

Key Benefits

There are many benefits a FTS TIC would deliver to its numerous stakeholders:

- **From a user prospective:**
  - Improved safety and security of public and private transport
  - Consumer valued capabilities/features/products enabled by ITS
  - Smarter end to end travel options with fewer delays
  - Greater choice of travel options
  - Improved accessibility to support better social inclusion
  - Improved efficiency in the haulage and logistics sectors
- **From a business prospective:**
  - Global connectivity of expertise to expedite the commercialisation of research to generate exploitable IPR and commercially viable solutions
  - Creation of a cluster of transport systems organisations
  - A platform for start-up businesses in transport technology areas

Key Benefits

- **From a national perspective:**
  - Reductions in transport related CO_2
  - A better means of influencing commuter behaviour
  - Better utilisation and integration of existing public transport systems
  - Improvement in the competitiveness of the UK
  - Direct economic benefits through increases in transport sector jobs
  - Increased direct foreign investment

FTS TIC - Operation

- Building on current effective models of business-university interaction that are already established, it is proposed that the FTS TIC will operate through six pillars of activity within a hub and spoke model:
  - Conceptualisation (Applied Research);
  - Integration;
  - Demonstration and verification;
  - Application (Spin-in, Intellectual Property commercialisation and spin-out);
  - Business models (Enterprise);
  - Knowledge Transfer (Teaching, Learning and Dissemination)
- FTS TIC will be delivered via a newly created non-profit distributing company, limited by guarantee, governed by a Board made up of Partners, Members and TSB representatives

Key FTS TIC Infrastructure

innovITS ADVANCE

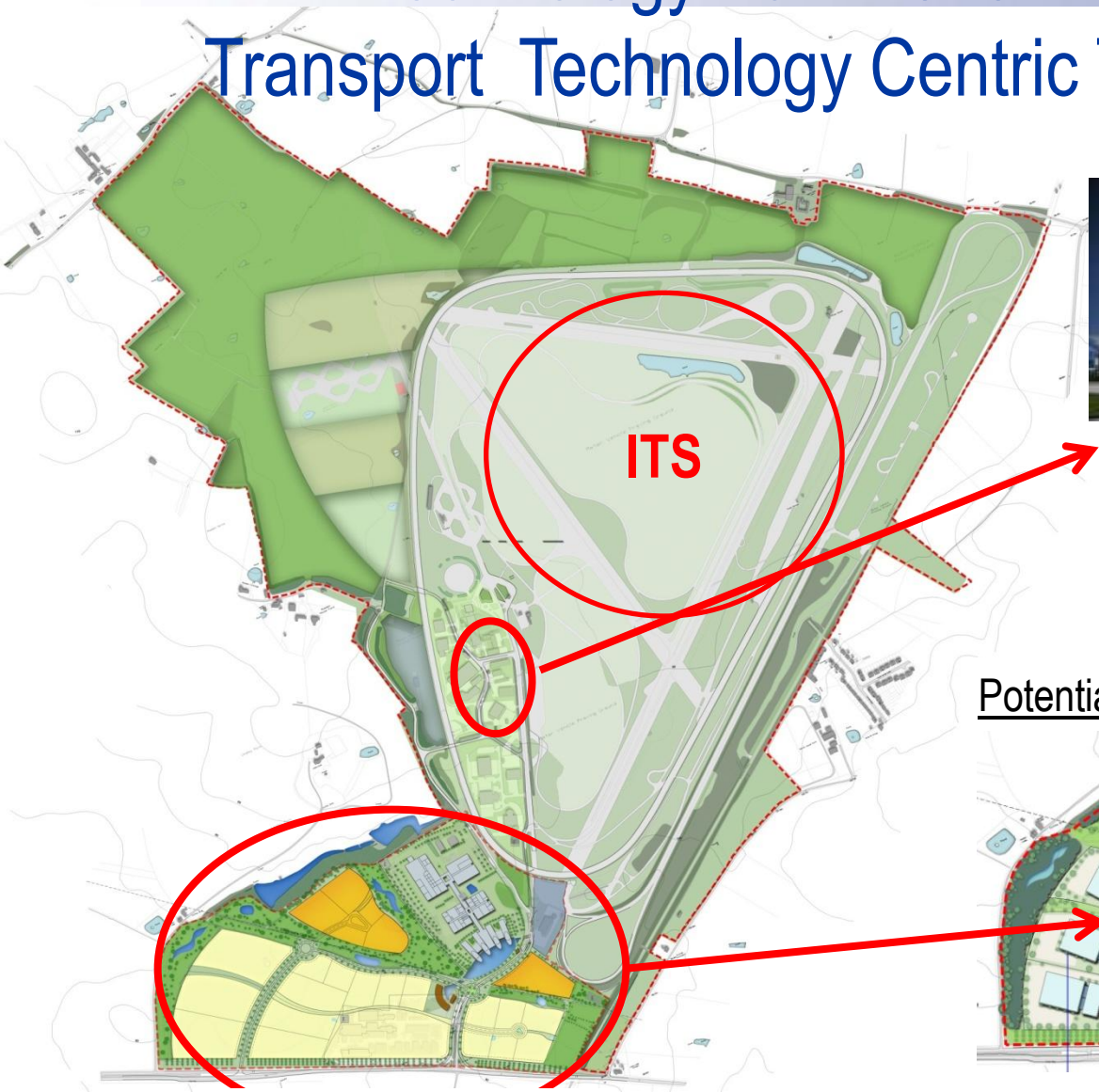
Future Transport Systems Institute

Potential High Speed Janet data link to Coventry University hub providing high speed global data connectivity

ja.net

Coventry University

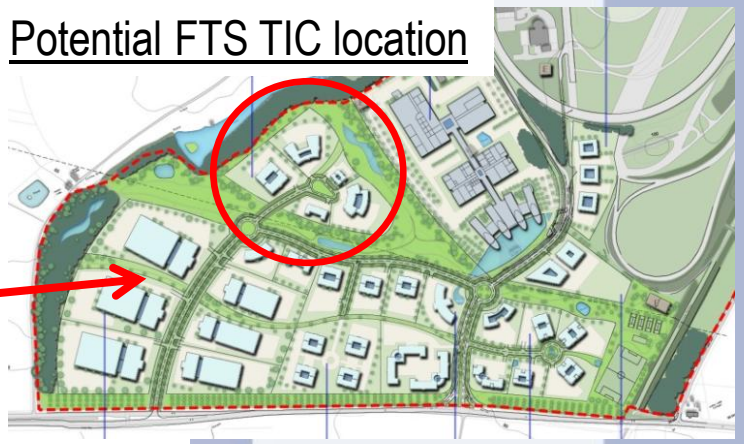
MIRA Technology Park 2020 Masterplan – 2mft2
Transport Technology Centric Technology Park



Main Site Development

Phase 1 - 2011

Potential FTS TIC location



Cross Sector Collaboration and Scale

- The FTS TIC has already established significant interest across multiple sectors including:
  - Automotive OEMs and Tier 1 suppliers
  - Rail Infrastructure and Operators
  - Marine industry
  - Defence including MoD
  - Road Infrastructure, Mapping and Urban Design
  - Telecoms, IT and ITS industry
  - Freight and Logistics
  - Universities including Imperial, Nottingham, Southampton, Newcastle, deMontfort, Leicester, Coventry, Loughborough
- January 27th workshop will bring together 60 companies and institutions individuals from the above sectors and build consensus on the focus areas and approach

Key benefits

- The creation of an FTS TIC will:
  - Create the necessary platform for the UK to take a prominent role in the global transport systems intelligent mobility market
  - Be a platform for transport systems technology start up businesses
  - Demonstrate a technological lead in intelligent mobility transport systems for the UK thereby creating the potential to attract inward investment from automotive, transport and telecoms sectors in emerging and developed markets
  - Build on existing public investments and act as a catalyst for private sector investment for the market exploitation of intelligent mobility technologies emanating from the commercialisation of research
  - Create an environment for cross sector collaboration and exploitation of known technologies

Strictly Private and Confidential

Automotive Technology Council

Energy and Infrastructure Work-stream Update

Background

At the request of the Technology Council (TC), an Energy and Infrastructure Work-stream was launched in mid 2010 (one of five TC Work-streams). Three meetings were held with a small number of stakeholders from across energy, automotive and government. The outcome was an agreed generic process for creating consensus roadmaps to introduce a new fuelling vector. This was presented to the TC on 25th November 2010 and accepted.

It is evident that, for a Technology Council specific output, significant manpower would be required to implement the process and produce each roadmap with sufficient depth and, importantly, consensus buy-in. It would be unrealistic to expect a small group of 'volunteers' to achieve this. Three potential options were identified at the TC meeting on 25th November 2010:

1. A Member (or group of Members) of the TC could fund the work on behalf of the Council;
2. Government could fund the TC to commission a consultancy to undertake the work; or
3. The TC could revise the scope for this Work-stream.

A number of members of the TC highlighted the importance of this Work-stream and the development of a clear direction for the introduction of new fuelling vectors into the market.

Assessment of Options

1. A Member (or group of Members) of the TC could fund the work on behalf of the Council

   The Work-stream pilots have discussed this option with a number of members of the Technology Council. The business case appears unviable for any single member (or small consortium) funding the work.

   A working meeting was also held between Henri Winand (Intelligent Energy), Robert Evans (Cenex), John Batterbee (ETI) and Robin Haycock (The Climate Group) to explore how a collaborative funding model could work between a group of TC members. The *'A portfolio of power-trains for Europe: a fact-based analysis'* report was used as a case study. The report was instigated by the German government, to underpin government policy making, and jointly funded (>£1m) by a large number of organisations.

   Without a clear direction from Government that the output will be embedded into policy, the business case for collaborative funding appears unviable. This conclusion has been tested in discussion with potential major contributors.

2. Government could fund the TC to commission a consultancy to undertake the work

   Given the current budget constraints across the public sector, this appears unviable. However, Government is funding relevant work (such as OLEV Plugged-in-Places, the hydrogen corridor, etc) which could be referenced.

3. The TC could revise the desired output from this Work-stream

   There are a number of organisations already investing in developing the technologies, understanding the market, testing the business cases, etc for new fuelling vectors. For example: the Energy Technologies Institute, the HyNet project, EU FP7 Green Car Initiative, etc. Many key investments are in the private sector.

   In principle, the Work-stream could seek to draw consensus and a common output between these organisations. However, this would require significant information sharing and effort from the participants. It is not evident there would be sufficient value return to the participants to make a separate TC Work-stream viable; it is likely to somewhat duplicate the activity of other organisations.

   The Energy Technologies Institute (ETI) already brings together a number of private energy businesses (BP, Caterpillar, EdF, E.ON, Rolls-Royce and Shell) and the UK Government. Rather than a separate TC Work-stream, the presentation slot at each TC meeting could be used as an opportunity for the ETI to provide an update from an energy and infrastructure perspective and identify key issues where the TC could support.

Proposed Way Forward

It is proposed that

- The agreed generic process for producing consensus roadmaps for introducing a new fuelling vector (previously accepted by the TC) is 'closed' until such time as it could be implemented via option (1) or (2) above.
- As per option (3) above, the separate TC Work-stream for Energy and Infrastructure will cease. Instead, the ETI will provide an update from an energy and infrastructure perspective at each TC meeting and identify key issues where the TC could support.

Technology Council Action Requested

The TC Chair has approved the Proposed Way Forward. Members of the TC are asked to note the way forward. The first presentation will be delivered by the ETI at the 25th January 2010 meeting.

EUROPEAN COMMISSION
DIRECTORATE-GENERAL FOR RESEARCH & INNOVATION

Directorate H - Transport
Sustainable Surface Transport

FP7-TRANSPORT 2011-05
17 January 2011

WP 2012 'Skeleton' – Overview of topics
SUSTAINABLE SURFACE TRANSPORT

Introduction

The following list of topics for the 2012 SST workprogramme is preliminary and needs further discussion.

The 2012 work programme will be designed to respond to the following major issues:

- Increasing railway capacity (Group of topics N° 1).
- Ensuring safe, green and competitive waterborne transport (Group of topics N° 2).
- Implementing research for the 'European Green Car Initiative' (Group of topics N° 3).
- Rest of topics/filling gaps (including topics on urban transport, ITS, road safety,..) (Group of topics N° 4).

Increasing Railway Capacity

- Planned budget for 2012 Workprogramme: ~ € 25 Mio

Topic	Funding Scheme
Management of energy in railway systems	CP-IP
Tools and conditions for an attractive, efficient and competitive wagon load traffic and its interaction with road or combined transports	CP-FP
Improving the performance of urban, suburban and regional rail networks and minimising service disruption in case of incidents on the urban rail system	CP-FP
European Rail network management in response to major disruption to the European transport system (e.g. post ash cloud, post snow, post industrial disruption, road blockage etc.)	CP-FP
Rail System Interoperability (regulatory and non-legislative interoperability based on technological innovations).	CP-FP
Standardisation of conventional signalling systems to accelerate a European ETCS rollout	CP-IP
Next generation tools for optimised infrastructure asset management	CP-FP
Europe to Asia : Rail research collaboration	CSA

Ensuring safe, green and competitive waterborne transport

- Planned budget for 2012 Workprogramme: ~ € 32 Mio
- WP 2012-13 will also contribute to ***cross-thematic marine and maritime research (Ocean of Tomorrow)***, as foreseen in the EU strategy for marine and maritime research

Topic	Funding Scheme
Green vessels for efficient logistics chain	CP-FP
Safety of ships in extreme conditions	CSA
The human element factors in shipping safety	CP-FP
E-guided vessels: the 'autonomous' ship	CP-FP
Innovative structural and outfitting materials for ships including inland ships	CP-FP
Inland Waterway Transport: Action to support the implementation of the on-going NAIADES action programme.	CSA
Cross-thematic marine and maritime research ("Ocean of Tomorrow")	
Assessment and mitigation of noise impacts of the maritime transport on the marine environment (Coordinated call within the framework of the Ocean of Tomorrow)	CP (max 4Mio€)

Support to the early implementation of the JPI "Healthy and Productive Seas and Oceans" (Support action within the framework of the Ocean of Tomorrow)	CSA (max 2Mio€)

European Green Cars Initiative

- Planned budget for 2012 Workprogramme: ~ € 65 Mio
- The current selection of topics is still provisional. A final selection of topics will mainly be based on the "prioritisation" exercise of the EGCI Industrial Advisory Group.
- As in the previous workprogramme (2011) all three components of the EGCI will be covered in Work Programmes 2012-13: 1) development of electric vehicles for road transport; 2) medium and long distance road transport; and 3) logistics and co-modality

Topic	**Funding Scheme**
1) Development of electric vehicles for road transport	
Lightweight materials and respective technologies for vehicle applications (Joint call with NMP and ENV: estimated budget of call: €25-30 Mio (~€10 Mio from SST budget) -	CP-IP
Smart infrastructures and services for electric vehicles in the urban grid and road environment	CP-FP, CSA
Rare materials	CSA
Innovations for battery systems manufacturing: packaging, prototyping, testing, staff training	CP, CSA for staff training
Modelling and testing for improved safety of alternatively-powered vehicles	CP-FP
Advanced Energy Simulation and Testing for FEV	CP-FP
Linking Pilots for EV based Transportation in European Cities	CSA
Raising end user awareness of electric cars	CSA
Automated electric vehicles	CP-IP
2) Medium and long distance road transport	
Complete Vehicle Energy Management…	CP
Driver Support (eco-driving/driver-coaching)	CP
Advanced aerodynamic design of trucks	CP
Extreme Low Rolling Resistance Tyres	CP

Innovative Truck Design	CP
3) Logistics and comodality	
Improve capturing and sharing of transport data in support of innovative freight transport schemes	CP-FP
Strengthening the information basis for intermodal freight transport operations	CP-FP
Optimisation models to select mode and plan loads	CP-FP
Eco-logistics	CP-FP or CSA
Platform for continuous intermodal freight transport strategic research and innovation	CSA
Innovative transhipment technologies	CP-FP
Green hubs and corridors	
Efficient bus systems in the urban environment	CSA

Rest of topics/Filling Gaps

- Planned budget for 2012 Workprogramme: ~ € 32 Mio

Topic	**Funding Scheme**
Ensuring sustainable urban mobility	
Research actions regarding the accessibility of transport systems	CP-FP, CSA
Design and operation of new or upgraded efficient urban transport interchanges	CP-FP
Take-up of transport innovation in urban and regional transport	CSA
Improving surface transport through ITS	
Research Cooperation with ICPCs and European Neighbourhood countries in the field of large event mobility management	CP-SICA, CSA-SICA
Road safety	
Large Scale Naturalistic Driving Observations for safe and sustainable transport	CP-FP
Setting Directions of Future European Road Safety Research	CSA
Modal shift – Logistics and intermodal transport	
More performing transhipment technologies for freight transport	

ERA-NET Transport III

- Planned budget for 2012 Workprogramme: ~ € 3 Mio