EcoTransIT World

2nd Stakeholder Workshop

How to align different methodologies for carbon calculation globally – the COFRET-project

CO2FRET Carbon Footprint of Freight Transport

Dr.-Ing. Verena Ehrler
DLR Institute of Transport Research

18th April 2012 - Hapag-Lloyd Headquarters, Hamburg

COFRET is a collaborative research and demonstration project part-funded by the European Commission, which will deliver a methodology for the calculation of the carbon footprint along the full supply chain

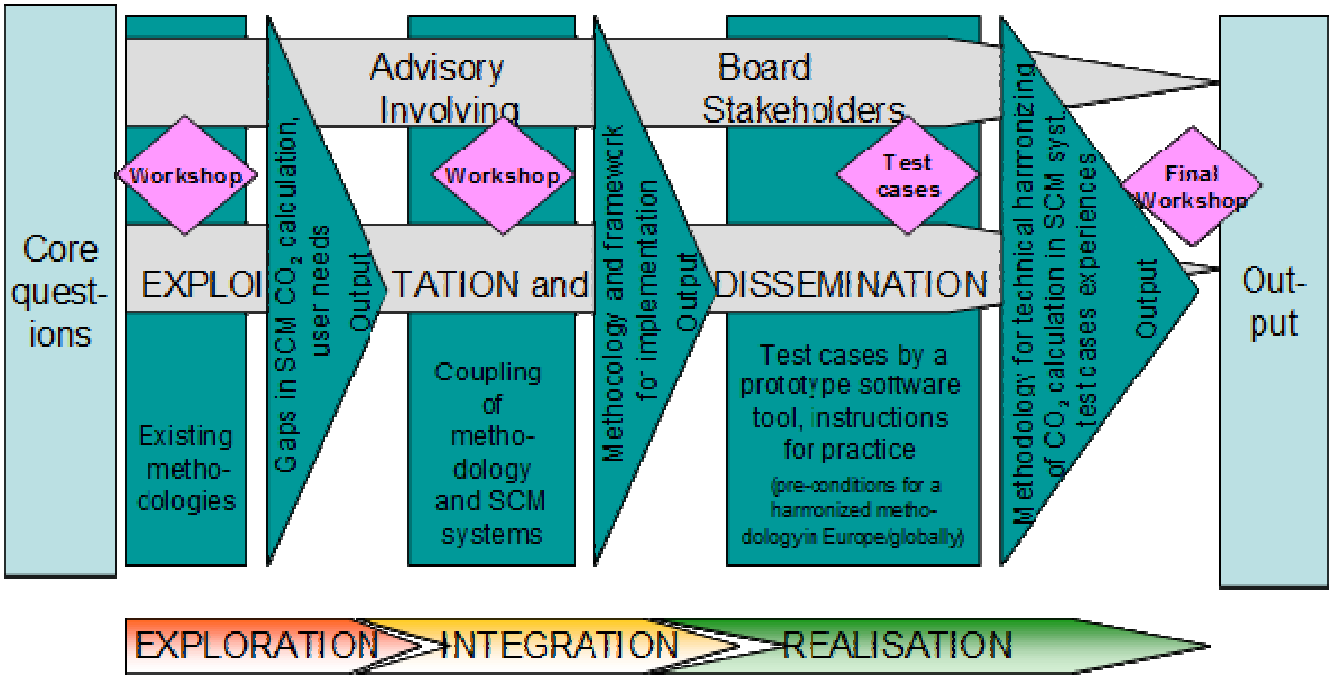
COFRET Objectives are to

- establish a complete GHG emission calculation methodology and framework in the context of complex supply chains based on available calculation tools for CO_2 emissions
- cover all types of shipments at company level and aggregated level of transport and logistics
- provide a methodology that is applicable for supply chains within the EU as well as in the global context
- embed practical exploitation as a key element of the technical work programme to maximise the eventual

Approach of the project

- work with the existing initiatives - close co-operation between the COFRET team and industry stakeholders
- develop a comprehensive methodology to be used in in-house and commercial applications
- test the methodology in real supply chain applications
- work to maximise the eventual uptake of the COFRET methodology

Project structure



Project partners

- DLR (Germany)
- IFSTTAR (France)
- RAPP Transport (Switzerland)
- VTT (Finland)
- PTV (Germany)
- TU Dortmund (Germany)
- HIT Certh (Greece)
- TTR (UK)
- TNO (The Netherlands)
- NEA (The Netherlands)
- Marlo Consultants (Germany, Norway)
- TOI (Norway)
- FVGT (Lithuania)
- IST (Poland)

Project Advisory Board

- Connekt (The Netherlands)
- Deutsche Bahn (Germany)
- DHL (Germany)
- Ewals Cargo (The Netherlands)
- Fiege AG (Germany)
- Kühne & Nagel (UK)
- Maersk Line (Denmark)
- Myclimate (Switzerland)
- NTM (Scandinavia)
- Sainsbury‘s (UK)
- Swiss WorldCargo (Switzerland)
- UPM (Finland)

Step 1: Review of existing resources and user needs

- State-of-the-art study to support COFRET methodology development
- The main tasks: identify, review and assess
  - existing methods, tools and databases
  - user needs, practices and experiences
  - future technologies and innovations
- in the context of freight transport carbon footprint calculation

Step 2: Assessment of existing methods, tools and databases

- A total of **102 objects** were identified as relevant to the COFRET project. Review and assessment was carried out using a structured review template.

- Four types of objects:
  - carbon footprint methodologies
  - carbon footprint calculation tools
  - emission factor databases
  - other activities and initiatives.

- **Assessment criteria**:
  - transport modes, vehicles and equipment covered
  - supply chain elements and logistics operations covered
  - emission compounds and life cycle phases covered
  - geographical and methodological approaches and data sources used, etc.

Step 3: Analysis of user needs, practices and experiences

❑**Methodology applied**: combination of

- in-depth interviews (29 interviews)
- on-line survey (62 answers)
- stakeholder workshop (17 participants) in Berlin January 2012.

❑**Stakeholders involved include:**

transport and terminal operators, logistics service providers, manufacturers, wholesalers, retailers and consumers, researchers and policy makers.

❑**Topics covered:**

- motivations to calculate carbon footprint
- current practices in regards to use of calculation tools and results
- current shortcomings
- future needs and expectations, etc.

Step 4: Future technologies and innovations

- Review of potential solutions to improve measurement or calculation of carbon footprint.
- Focus on future technology development and system integration opportunities with carbon footprinting.
- Three main areas of interest:
  - supply chain and transport planning systems (e.g. multimodal routing systems)
  - information and communication systems (e.g. positioning and internal vehicle systems)
  - business applications (e.g. enterprise resource planning and fleet management systems).

Conclusions to be drawn from the state-of-the-art review so far

- up-to-date knowledge-base of existing methods, tools and databases: consistent but vague methodological base, wide variability and fragmentation in tools and data
- identification of the most relevant methods, tools and databases from the COFRET point of view
- clarified user needs: strong pull for harmonisation
- potential to employ future technology systems identified
- confirmation of the COFRET objectives (methodology to cover all transport and logistics along the supply chain)
- cooperation with stakeholders and parallel development activities established

COFRET - Next steps

- catering to user needs and expectations: balancing simplicity ↔ flexibility ↔ accuracy
- cooperation around best available methods, tools and databases, as well as technology systems
- compliance with leading standards and programmes
- numerous technical details to be investigated: application areas, inputs & outputs, allocation, time averaging, data acquisition, system boundaries, uncertainties, etc.
- involvement of all relevant actors along the supply chain.

COFRET deliverables up to date:

- Deliverable 2.1: Existing methods and tools for calculation of carbon footprint of transport and logistics
- Deliverable 2.2: User needs, practices and experiences in the context of carbon footprint calculations in supply chain configurations
- Deliverable 2.3: Future technologies and innovations relating to freight transport which are relevant for carbon footprint calculation
- Deliverable 2.4: Methodologies for emission calculations - Best practices, implications and future needs (SUMMARY REPORT)

To be available at the COFRET website http://www.cofret-project.eu

Scope of the COFRET-project

COFRET's main objective is to **develop** and **test** a **methodology for the accurate calculation of carbon footprint of transport and logistics in the context of supply chains**. COFRET provides a methodology to calculate CO2 emissions and if applicable further greenhouse gases (GHGs) such as CH4 and N2O as well as so-called F-gases deriving from cooling processes.

COFRET assesses currently available methodologies and tools and provides solutions for gaps. All supply chains can be constructed using supply chain elements (SCEs). SCEs are for example FTL road transport, distribution routes, transhipment processes, storage and order picking and cooling processes. The COFRET methodology considers **all transport modes and all logistics operations**.

The COFRET methodology will **comply fully with the CEN standard EN 16258** to be published in 2012. COFRET **goes beyond the EN 16258** standard, which covers only transport within a supply chain. The added value of COFRET is that it allows logistics related CO2 emission calculations in complex supply chains at product or shipment level.