

# EMECrid

The R&D group of EMEC

# Newsletter

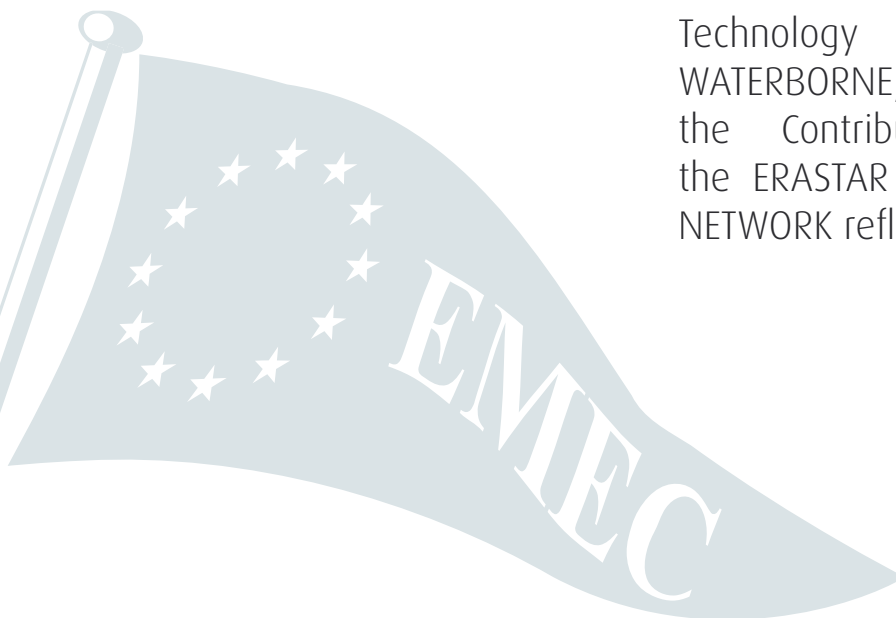
2006

# Editorial

Patrick Person  
Chairman EMECrid



This first EMECrid Newsletter reports on the works carried out by this Working Group of EMEC( i.e. EMECrid) since its start beginning of 2005. It reminds the objectives and the structure of EMECrid and the considerable work of our Group in the establishment of the VISION and the STRATEGIC RESEARCH AGENDA of the Technology Platform WATERBORNE, with the Contribution of the ERASTAR Thematic NETWORK reflections.



# EMECrid



During its late 2004 General Assembly, EMEC approved the establishment of a new Working Group devoted to Research, Innovation and Development, called EMECRID.

The structure of EMECRID consists in two working groups :

- WG1, in charge of communication (dissemination of information related to R, I and D) and lobbying towards the European Parliament, the Commission and the Members States.

Its tasks are piloted by the EMECRID chairman and the EMEC General Secretary ; and helped by national contact persons ; one for each country whose the association belongs to EMEC.

- WG2, in charge of the promotion of project proposals to be funded by national and European Union (Framework Programmes) financing. This promotion is ensured through :
  - a mind / long term vision ; the targets of the profession at the 2020 horizon

- a strategic research agenda : which describes the RDI studies to be carried out in order to reach the above targets
- an implementation plan : which gives the details, at the level of the project proposals, of the above research agenda.

This WG2 is piloted by ROLLS-ROYCE (Duncan FORBES with Norman GRUM) and the tasks are shared in seven Technical Working Groups (TWG) as indicated hereafter :

TWG N°	CONTENT	PILOT	
A	Power Generation Propulsion Systems	C. Krackhardt	Man. Bw
B	Steering – Stabilizing – Anchoring – Mooring	S. Kiryacou	Hatlapa
C	Control – Navigation Telecommunications	W. Hensel	Sam Electronics
D	Electricity – Automation ( Safety – Survivability	W. Kruijt	Imtech
E	Cargo Handling – Ship-shore interfaces Equipment for special ships	J.t. Pedersen	Logit
F	Piping and Ducting Systems (HVAC) – Waste Management Ballast Management	E. Knoth	Deeberg Systems
G	Steel and other materials – Production Processes – Engineering service Coatings- Coverings – Insulation – Accommodation and Hotel services	F. Caldeira Saraiva	Bmt

The first task of EMECRID has been to bring the contribution of the maritime equipment industry to the different papers and actions of the TECHNOLOGY PLATFORM WATERBORNE (see the description of Waterborne in the present Newsletter). We must thank the excellent job carried out by the seven Technical Working Groups and, in particular, by Duncan FORBES and Norman GRUM who have not only piloted the content of our contribution, but also ensured the editing work of the whole Platform for all maritime industry in Europe.

Norman Grum  
Secretariat  
EMECrid Technical Working Groups

## The route to competitiveness through R&D

The Marine Equipment and Systems industry supports the whole marine value chain and stakeholders. This includes the port infrastructure and operation to the ship/shore interface, shipbuilding and ship repair, through to ship operation and through life support. The size of this market is much larger than new shipbuilding itself, where the marine equipment industry on average contributes 70% of the value of a ship.

The equipment supply industry therefore plays a central role within the maritime economy in Europe. In terms of head count and turnover, it is not only bigger than the European shipyards but may also be stronger than the supplier industries of the two largest shipbuilding nations today - Japan and the Republic of Korea.

This strong economic position has not been reflected in the influence of the Marine Equipment industry on EU R&D policy, objectives and funding through the Framework programmes. The Research Innovation and Development Working Group, EMECRID, has been established to address this situation.

EMECRID represent the industry on the Waterborne Technology Platform, to ensure that the Equipment industry's voice is clearly heard in a balanced assessment of the R&D needs of the whole European maritime industry. EMECRID has been very proactive in providing leading input to Waterborne. It generated the EMECRID Vision and Research Strategy documents that set a standard for the contributions of the Waterborne industry association members. Duncan Forbes and Norman Grum of Rolls-Royce have represented EMECRID on the Waterborne Support Group. They have taken an active role in the preparation of the Waterborne Vision and SRA documents as editors.

This has been well received and now EMECRID will take a strategic position in the preparation of the Waterborne SRA Implementation Plan (IP), by leading the WG writing the Competitiveness pillar of the plan. The IP will form a key input to the Commissions Framework 7 work programme. Framework 7 will be of vital importance to the competitiveness of the European Equipment industry because of the significant research funding available.



### Framework 7 - Key Facts

*Framework 7 will be the main source of European research funding for the next 5 years.*

**Programme duration:** 2007 to >2012

**Total expected budget :->** 40 BEuro

**Annual estimated surface transport (marine, rail and road) budget** 1.2 BEuro

Large scale Technology Demonstrator joint funding (25-50 MEuro),  
proposed through European Investment Bank (EIB)

### FP7 2006 Launch Timetable

December: First FP7 call for proposals.

September FP7 Work Programme approval

July Draft FP7 Work programme presented to EC Advisory Board

June WATERBORNE Implementation Plan input to the FP7 Work Programme

18 May Marine Equipment Technology Demonstrator requirements workshop

4/5 May WATERBORNE Technology Platform Strategic Research Agenda (SRA) launch

February EMECRID Research Strategy published

The draft FP7 work programme will be completed by the Commission by the end of June. The inputs to this work programme will be; the Waterborne Vision and SRA, and Waterborne Implementation Plan (IP) proposals.

A draft of the Waterborne IP will be completed by the end of May. A technical workshop at Rolls-Royce in Derby has been proposed for the 18th of May. The objective of the workshop is to promote research themes and the concept of a lon-

ger-term technology demonstrator programme that FP7 project proposals could all contribute to. Examples could be the next generation modular European Short Sea Ship, the Highly Automated Ship of the Future or the Energy Efficient ship. These concepts could provide the platform for a wide range of technology projects; bio-mechanical propulsion, modular design and build, alternative fuels and fuel cells, automation and EHM, automated mooring, loading and un-loading, etc.

The EMECRID input to Waterborne has so far has been largely provided by a few companies and individuals who have been willing to put in the required effort. Support from the industry as a whole has been missing. I would encourage the EMEC members to support this workshop. We must take the opportunity to contribute to raising the ambition of the equipment industry to achieve the competitiveness we need for the future, through the promotion of ambitious research projects and technology demonstrators.

# R&D Activities within EMEC

A key factor for the wellbeing and sustainable growth in the marine equipment industry is innovation and this can only be achieved by investing in R&D.

Insofar as the marine equipment industry is made up of thousands of SMEs, the setting-up of collaborative projects with companies with more R&D resources is essential in order to reach the necessary critical mass to make such R&D projects viable. The structure exists whereby enterprises can participate actively in "Thematic Networks", "Integrated Projects", "Coordination Actions", etc organised by international consortia and funded partly by the European Commission via its Framework Programmes.

**Bernard Dognaux**  
Former Secretary General of EMEC



Whilst the day-to-day pressure on companies to win orders and stay profitable is considerable, investment in R&D is the only way to ensure the long term sustainability of the industry.

In November 2004 EMEC responded to the challenge by creating the working group called EMECRID (EMEC Research, Innovation and Development).

Before the EMECRID initiative, EMEC participated in several projects quite modestly, building networks within the maritime community and preparing more ambitious research projects so that EMEC is now involved in many of them.

A first Thematic Network (TN) called ERAMAR started in 2002 aiming to mobilise the Maritime Industry at large towards a co-ordinated effort to define its R&D targets for the medium and long term in response to market and society needs and requirements. This TN terminated in April 2005 having succeeded to give - for the entire maritime cluster - a better perspective of the required R&D effort for the coming 10 years.

A similar TN called ERASTAR started in 2003 and is more focused on specific shipbuilding R&D activities. EMEC is playing an important part in this project bringing its competence in the equipment field and contributing to the innovation process in shipbuilding.



EMEC is deeply involved in the new "Technology Platform" instrument taking an active role in defining and writing the R&D "Vision and the "Strategic Research Agenda" of the Waterborne TP for the year 2020 through EMECRID.

The overall objective of the new "FLAGSHIP" IP is to improve the safety, environmental friendliness and competitiveness of European maritime transport. The project will contribute to a further increase in the capacity and reliability of freight and passenger services and to a reduction of negative impact from accidents and emissions.

The emphasis of the project is on on-board systems and procedures, ship management systems on shore, impact of new technology on present ship-, owner- and operator organisations, effective and efficient communication interfaces and impact of standards and regulations.

EMEC has a crucial role to play in this project and, once again via EMECRID, will demonstrate its capacity to tackle the future competition challenges and stay at the leading edge of the technology.

Another important project called "EF-FORTS" is presently in the negotiation phase. This IP has the objective to enhance the port operations efficiency and safety. Here again EMEC will demonstrate its competence as a global actor within the maritime sector.

The "EUROMIND" Coordination Action will also be part of the EMEC's R&D activities.

The aim is to create an innovative European Open Maritime Industry through facilitating the integration of standards into new business practices and services

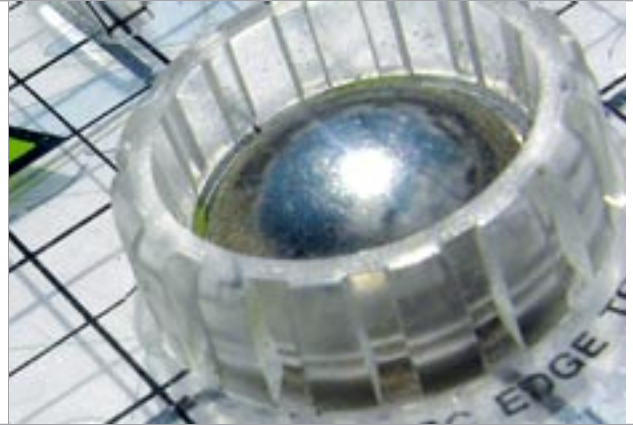
And finally, EMEC is member of the Advisory Committee of "SAFEDOR" which is a huge project mainly devoted to risk-based design. A lot of EMEC companies are participating in this and for sure will raise the image of the marine equipment sector that is already considered as the most dynamic and inventive sector in the maritime world.



# ERASTAR

## Thematic Network

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 Technical Coordinator of ERASTAR  
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### 1. MAIN CHARACTERISTICS

ERASTAR is a Thematic Network submitted and approved under FP5 in 2002. This tool, called Coordination Action in FP6, is targeted to promote the Coordination in research and Development of a given sector or action ; it does not include research or development study. The funding is 100%.

ERASTAR stands for European Research Area, Shipbuilding Technology Applied Research. It is totally devoted to the promotion of projects to be funded under EU programmes in the shipbuilding and equipment industry. The duration is 4 years, it started on the 1st of January 2003 and will end on the 31st of December 2006. The budget is 2 million euros. The Coordinator is CESA (Committee of European Shipyards Associations) on behalf of COREDES (the R and D Working Group of CESA). The 42 partners come from 5 different types, all working for the shipbuilding industry :

10 shipyards

**12 equipment manufacturers<sup>1</sup>**

12 research centers and model tests basins

6 maritime universities

2 classification societies

and representing 11 EU countries plus NORWAY.

### 2. STRUCTURE

It consists in SIX TECHNICAL Workpackages dealing with the PROCESS and the PRODUCTS (ships and ship systems), to which SIX HORIZONTAL Workpackages bring their contribution in their domain.

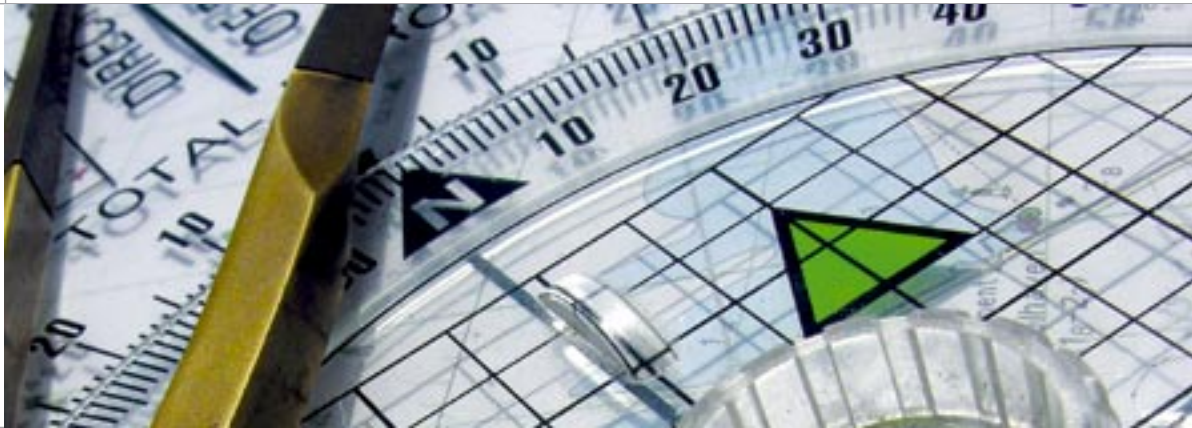
TECHNICAL WPS		PILOT
N°	DEFINITION	
1	Hydrodynamics and Structures	Research Center
2	Ships Systems and Ship-Shore Interfaces	Equipment Manufacturer (ROLLS-ROYCE)
3	Design and Supply Chain	Shipyards
4	Production Processes and Technologies	Shipyards
5	Management - Logistics - Scheduling	Shipyards
6	New Ship Concept	Conception and Design Expert

HORIZONTAL twPS		PILOT
N°	DEFINITION	
A	Coordination and Management	CESA / PEMAR
B	Suppliers - e-commerce - SMES	Equipment Expert
C	IT - Standardisation and International Networking	Shipyards
D	Clients market and Societal needs	Classification Society
E	Human Factors Engineering	Maritime University
F	EU Policies	Shipyards Associations

Each Technical Workpackage is divided into 3 Tasks :

TASK		PRECISIONS
N°	DEFINITION	
1	Redaction of the updated STATE of ART leading to the <u>R&amp;D needs and priorities</u> <u>Promotion of RTD projects</u> for funding by EU and/or National Programmes	These works are performed in particular through the organisation of TECHNICAL EVENT and REGIONAL WORKSHOPS. (see hereafter for 2006) These works have intensively contributed to the redaction of the STRATEGIC RESEARCH AGENDA and the IMPLEMENTATION PLAN of WATERBORNE TP
2	Exchange of information of the results of the approved and on going EU funded projects	This leads to build a matrix where the results of each project implement the different subchapters of each maritime critical technology
3	Same as Task 2, but for a certain number of National funded projects	id

1. They Are : Rolls Royce (UK), Tts (SW), Balance (G), Tecnomare (IT), Delta Marin (FIN), Sirehna (F), Gican / pemar (F), Cofrena (F), Emec (EU) Sms (F), Aveva (SW), Twi (UK).



Each Horizontal Workpackage is divided into 2 tasks :

TASKS		PRECISIONS
N°	DEFINITION	
A	Definition of the Horizontal WPS and Analysis of the possible contribution to the Technical WPS	For which Technical and which content
B	Building the concrete contribution	To each Technical WP, with the concrete input

### 3. TECHNICAL EVENTS and REGIONAL WORKSHOPS FOR YEAR 2006

The list, which can be updated during the year, is as follows :

Kind Of Event	Definition	Where	When
Technical	Production Processes and Technologies (WP4 + 5)	Flensburg Yard (G)	<u>Done</u> 23 – 24 February
Technical + Regional	Inland Shipping	Dst Duisburg (G)	<u>Done</u> 07 – 08 March
Regional	e-commerce (in National language)	Meyerwerft Aapenburg (G)	26 Avril
Technical	Power Generation and Propulsion Systems (WP2)	Derby (Rolls Royce)	18 May
Regional	Maritime RD needs in Finland (in National language)	Helsinki	29 May
Regional	Maritime RD needs in France	St. Nazaire (Chantiers Atlantique)	June
Technical	Hydrodynamics and Structures (WP1) with NAV 2006 Conference	Genoa (Cetena)	21 – 23 June
Regional	Maritime RD needs in UK	Glasgow (Ssrc)	September
Technical	Design Processes – CAD ... (WP3)	Brussels	Mid November
Seminar	Promotion of PROJECTS for the 1 <sup>st</sup> call of FP7	Delft	21 – 23 November

All members of National Associations belonging to EMEC can attend all these events when they are interested : contact is the Technical Coordinator of ERASTAR or any organiser of these events.

# Waterborne

**Patrick Person**  
Chairman EMECrid



WATERBORNE is the European maritime TECHNOLOGY PLATFORM. A Technology Platform is a new tool or structure put forward by the previous Commission in order to better coordinate the research and development needs and funding of a given sector, and regrouping the Commission services, the Members States and all the industrial actors in each sector ; the target is to establish in each sector the European Research Area (ERA). Presently about thirty technological platform are working in the European industries, and, in particular, in each of the 4 transports sectors (air – road – train – maritime), plus the intermodality.

The maritime TP WATERBORNE organisation is based on the European Associations of all the maritime stakeholders which constitute the Support Group ; this decision is due to the large fragmentation of the maritime European industry and avoids the TP to become a “closed circle” of some individual larger enterprises.

These European Associations organise the participation of their individual members in the different tasks of the WATERBORNE support Group (it is the role of the seven Technical Working Group of EMECRID, as far as the equipment industry is concerned). The results of the works of the Support Group are presented and discussed with the Commission services and the Members States, amended if needed and then are considered as the consensus between all members ; in order to facilitate the discussions, the 18 E.U.

members states(1) have organised this Mirror Group who sends 2 – 3 representatives to the Support Group for implementation.

Final approvals and commitments are made by the annual General Assembly, presently the Maritime Industry Forum which is formed by high level representatives of the industry.

The maritime stakeholders belonging to the Support Group are :

- the ship users
- the shipbuilders and repairers
- the equipment manufacturers (EMEC)
- the offshore technology
- the inland shipping operators
- the classification Societies
- the research institutes
- the maritime universities
- the ports and terminals
- the dredging and infrastructure
- the leisure craft
- the trade unions

The Support Group is chaired by the Classification Societies (presently BUREAU VERITAS : turning chairmanship each two years) and the secretariat is ensured by the shipbuilders.

The Mirror Directorate General involved are :

- DG Research : Space and Transport Environment Industrial Technologies
- DG Transport and Energy
- DG Environment
- DG Enterprise
- DG Fisheries and Maritime Affairs
- DG Information Society and Media.

The first task of WATERBORNE TP, as for any TP, has been to establish a medium / long term VISION (2020) which aims to categorise where the industries would like to stand by year 2020, the ambitions targets to be met and the related innovation challenges. This vision is carried by THREE PILLARS :

**1. Safe – Sustainable – Efficient waterborne transport – Improving safety, security, environment sustainability and efficiency**

**2. Competitive European waterborne industry – for transport and operations, in shipbuilding and equipment, in offshore services and technologies, in leisure craft, and in infrastructure, ports and dredging**

**3. Managing and facilitating the growth in transport volumes and the changes in trade patterns. In particular with the necessary technology tools**

These three pillars needing to be implemented by three cross industry enablers :

- the education
- the information and communication technologies
- the EU maritime policy

This VISION 2020 has been established during the year 2005 and has been officially presented to the COMMISSION (Commission POTOČNIK – RESEARCH) on the 8th of February 2006 by the CESA and EMEC chairmen.

For the equipment part, the works have been carried out by the seven Technical Working Groups of EMECRID,

piloted by ROLLS-ROYCE (Duncan FORBES and Norman GRUM)

The second task of WATERBORNE TP has been to develop from VISION 2020 the corresponding STRATEGIC RESEARCH AGENDA, which addresses, at the executive level, the numerous RDI challenges to take up in order to reach the targets of the VISION 2020. The WATERBORNE STRATEGIC RESEARCH AGENDA (WSRA) describes the priorities for RDI of the key three pillars of the 2020 maritime VISION for EUROPE.

#### PILLAR n°1

- Safe, Sustainable and Efficient Waterborne Operations. The following priority areas have been identified.

- Implementing risk based frameworks for cost efficient safety
- Targeting the “Zero Accident” (\*\*)(2)
- Increasing the efforts towards the “Crashworthy Vessel” (\*)
- Designing and building the “Low Emission” Vessels and Waterborne activities (\*\*\*)
- Enhancing Waterborne Security

#### PILLAR n°2

- A Competitive European Maritime Industry

- Proposing Innovative Vessels and Floating Structures (\*\*)
- Proposing Innovative Marine Equipment and Systems (\*\*\*)
- Developing tools for Accelerated Innovation (\*\*)
- Establishing the next generation of Production Processes (\*\*\*)
- Increasing the efforts towards a more effective Waterborne Operation

#### PILLAR n°3

- Manage and Facilitate growth and changing Trade patterns

- Accelerating the Development of New Port and Infrastructure Facilities (\*\*)
- Proposing Technologies for New and Extended Marine Operations (\*\*)
- Increasing drastically the interoperability between the transport modes (\*\*\*)
- Improving the effectiveness of ports and infrastructures (\*\*\*)
- Ensuring intelligent transportation technologies and integrated ICT solutions (\*\*\*)
- Improving the Traffic Management Strategies

In parallel with these three Pillars, the strategy has to be implemented with three critical enablers needed to achieve the VISION 2020 targets :

- EDUCATION – Human resources and Training
- INTELLECTUAL PROPERTY (IPR) – which has to be defended much more than in the past
- GENERAL MARITIME POLICY : a framework based on joint initiatives and level playing field should be established at the international level.

EMECRID members have participated deeply in the redaction of the WSRA for the equipment industry part (we should remind that 50% to 80% of the cost of any ship, depending of her type, comes from equipment) ; the editor of the whole WSRA of WATERBORNE is ROLLS-ROYCE. The present situation of the WSRA is the following : the draft 3.5 has been approved by the MIRROR GROUP and will be officially presented to the Members States, the Commission and the Industry of the 4th and 5th of May on VIENNA (the EU is now chaired by AUSTRIA).

The third task of WATERBORNE TP, presently on the way, is to implement the above WSRA in a detailed plan to describe, at the detailed level of the project ideas, the RDI studies to be performed in the years to come to achieve the goals clearly mentioned in the WSRA.

The seven Technical Working Groups of EMECRID (WG2), under the chairmanship of ROLLS-ROYCE, are again totally involved in the redaction of this implementation plan.

This means that it is time now to mention the RDI themes you, equipment manufacturers, a member of any National Association belonging to EMEC, would like to be submitted as an RDI project to be funded under the next RD Framework of the Commission (FP7).

(1) BULGARIA, NORWAY, ROMANIA, TURKEY are also invited, which can makes a total of 22 members states  
 (2) (\* - \*\* - \*\*\*) show the interest for the equipment industry (medium – big – very big)



## EMECrid Chair

Patrick Person - EMECrid Chairman

Duncan Forbes - Chairman of the Technical Working Groups

Paola Lancellotti - EMEC Secretary General



## EMECrid Technical Working Group Leaders

Duncan Forbes	RR	Chairman
Norman Grum	RR	Secretary
Christoph Krackhardt	MAN B&W	WG A Leader
Stelios Kyriacou	HATLAPA Hamworthy	WG B Leader
Wilfried Hensel	SAM	WG C Leader
Wouter Kruijt	IMTECH	WG D Leader
Jan Tore Pedersen	TTS	WG E Leader
Eckart Knoth	Deerberg	WG F Leader
Fernando Caldeira-Saraiva	BMT	WG G Leader

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