

ALSTOM

**THEMATIC NETWORK
CLEANER & MORE EFFICIENT
GAS TURBINES (CAME-GT)**

CONTRACT NO: ENK5-CT-2000-20062

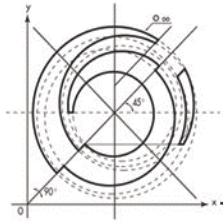
**Second Combined Workshop
Brussels**

4th October 2001

David Pollard

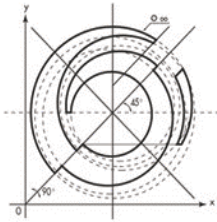
CAME-GT Project Co-ordinator

CAME GT



OBJECTIVES

- ✍ Co-ordinate RTD projects in Industrial Gas Turbines
- ✍ Four Technology Clusters
 - turbomachinery
 - combustion
 - materials
 - systems
- ✍ RTD Strategy
- ✍ Exploitation & Dissemination
- ✍ Training & Education

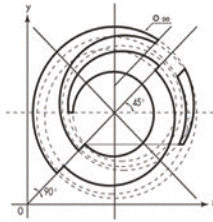


Existing Partners



- ✍ ALSTOM Power (co-ordinator & RTD Strategy)
- ✍ MAN Turbomaschinen AG (MGB) (Turbomachinery Cluster)
- ✍ DLR (Combustion Cluster)
- ✍ Siemens (Materials Cluster)
- ✍ MAN Turbomaschinen AG (MGB) - (Systems Cluster)
- ✍ Rolls-Royce Power Engineering (Exploitation and Dissemination)
- ✍ Vrije Universiteit, Brussel (GT Training)
- ✍ Gastec NV (Exploitation & Dissemination)

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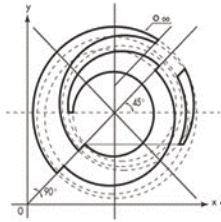


New Partners (Contract Revision in Negotiation)

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- ✍ TURBOINSTITUT, Slovenia (Network in pre-accession countries)
- ✍ Ansaldo (Pre-normative research for gas turbine plant)

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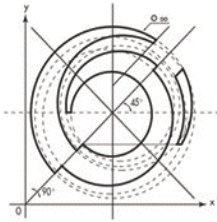
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OPERATION

- ✍ Cluster workshops
- ✍ Two conferences
- ✍ Web site

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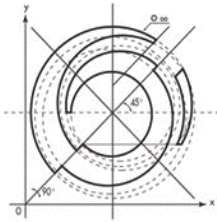
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First Cluster Workshop 16th February 2001

- ✍ Introduction of 10 FPV GT projects
- ✍ Description of National Programmes
- ✍ All member states represented except Spain, Ireland & Luxembourg

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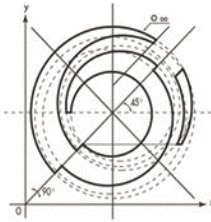
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Second Cluster Workshop 1st October 2001

- ✍ Introduction of Cluster Breakout Sessions
- ✍ Progress on 10 FPV GT projects
- ✍ Introduction of one new FPV project
- ✍ Demonstration projects in negotiation
- ✍ Description of projects in National Programmes
- ✍ Introduction of researchers from pre-Accession countries.
- ✍ Gas turbine instrumentation network (EVI-GTI)
- ✍ GT Centres of Excellence Network (CE-IGT)
- ✍ Discussion of EU/US Links

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New Projects



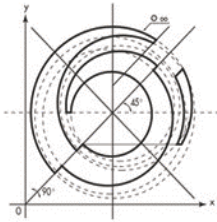
Medium/Long Term

- ✍ New Combustion Systems for Gas Turbines (NGT)

Short Term (in negotiation)

- ✍ Numerical validation and simulation of GT plant
- ✍ Tri-generation promotion with Brazil
- ✍ Low NOx Fuel Staged Combustor (Fuel Chief)
- ✍ Nano-precipitate hardened ferritic steel rotor (NANO ROTOR) Thematic Network
- ✍ EuMIGT Project (CE-IGT)

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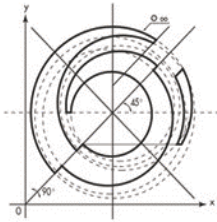
Pre-Accession Countries



Countries contacted:

Bulgaria, Czech Republic, Estonia, Hungary,
Latvia, Lithuania, Poland, Romania, Slovakia,
Slovenia

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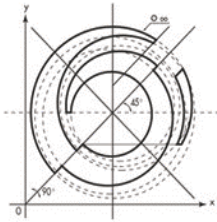


FPV Objectives

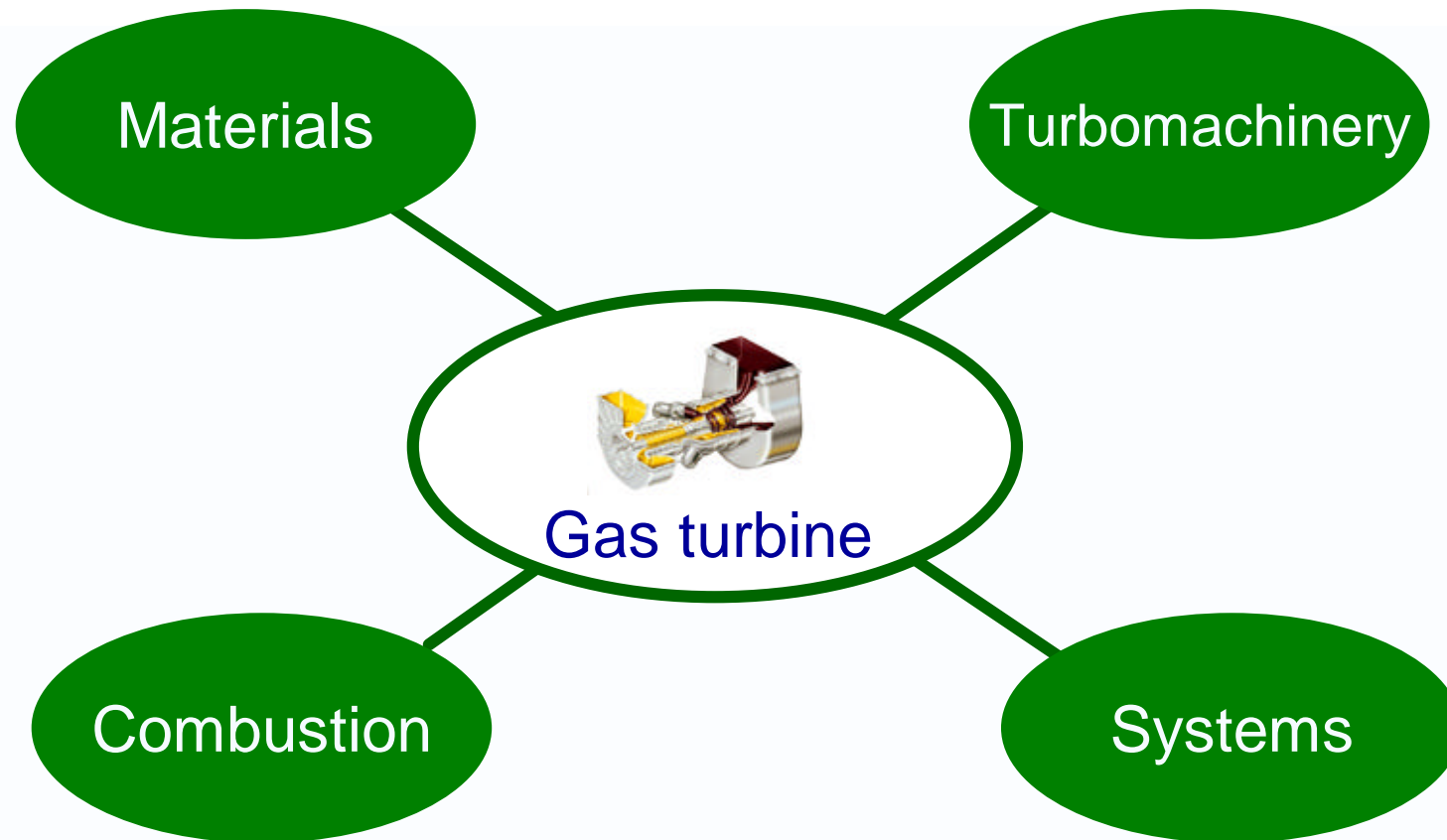


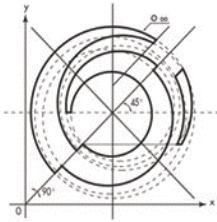
Type of Gas Turbine		Combined Cycle/ Advanced Cycle	Advanced Open Cycle	Small Gas Turbine
Efficiency Medium Term	%	> 60	50	35
Efficiency Long Term	%	> 65		
Availability	%	> 90		
Reliability Medium Term	%	95		
Reliability Longer Term	%	97		
NOx Emissions	(ppmv)	< 20		
Fuels LHV	%	< 25 of natural gas		



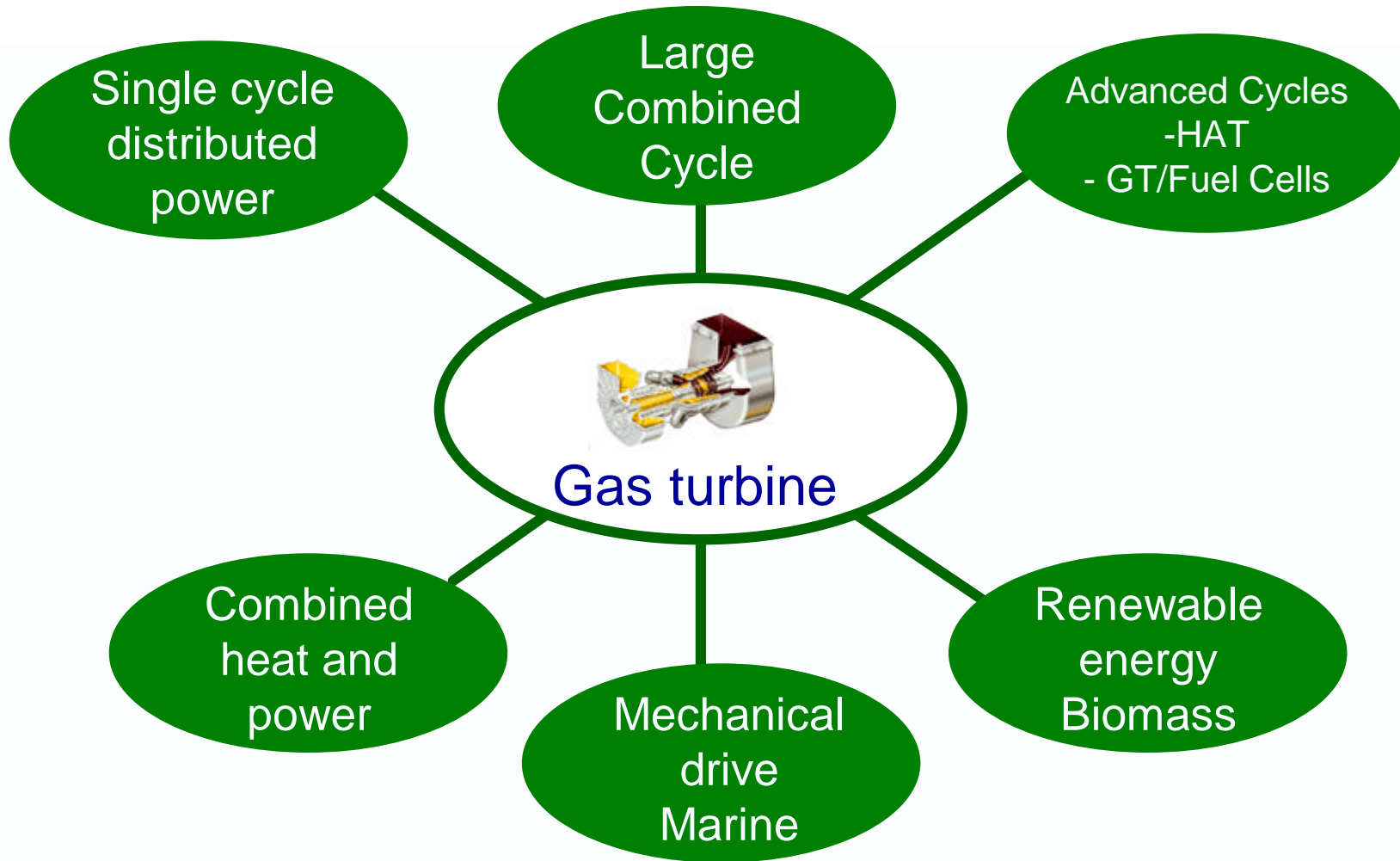


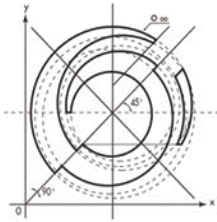
GT Technology



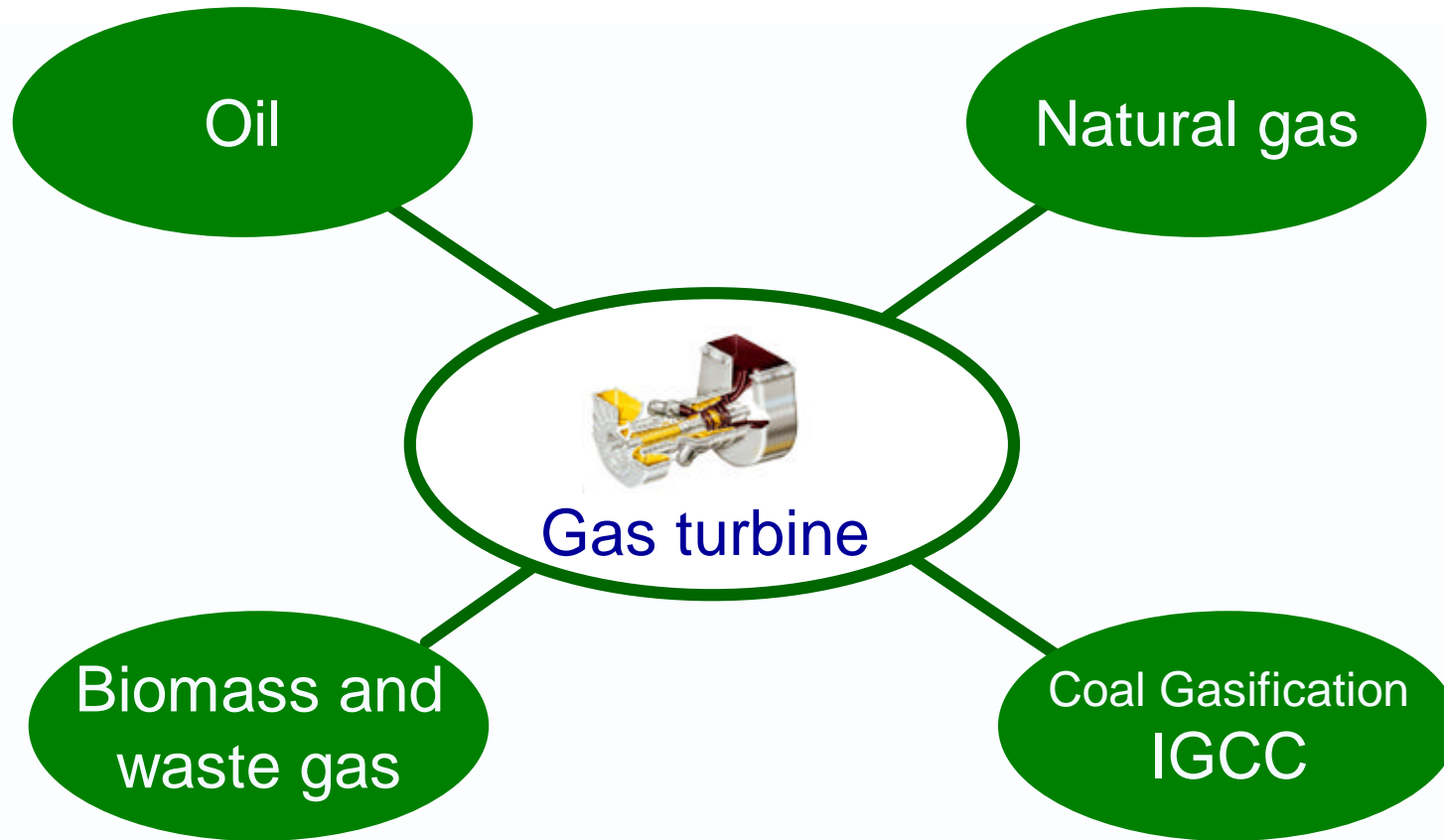


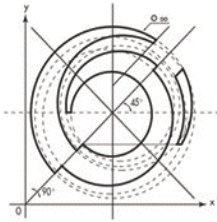
GT Applications



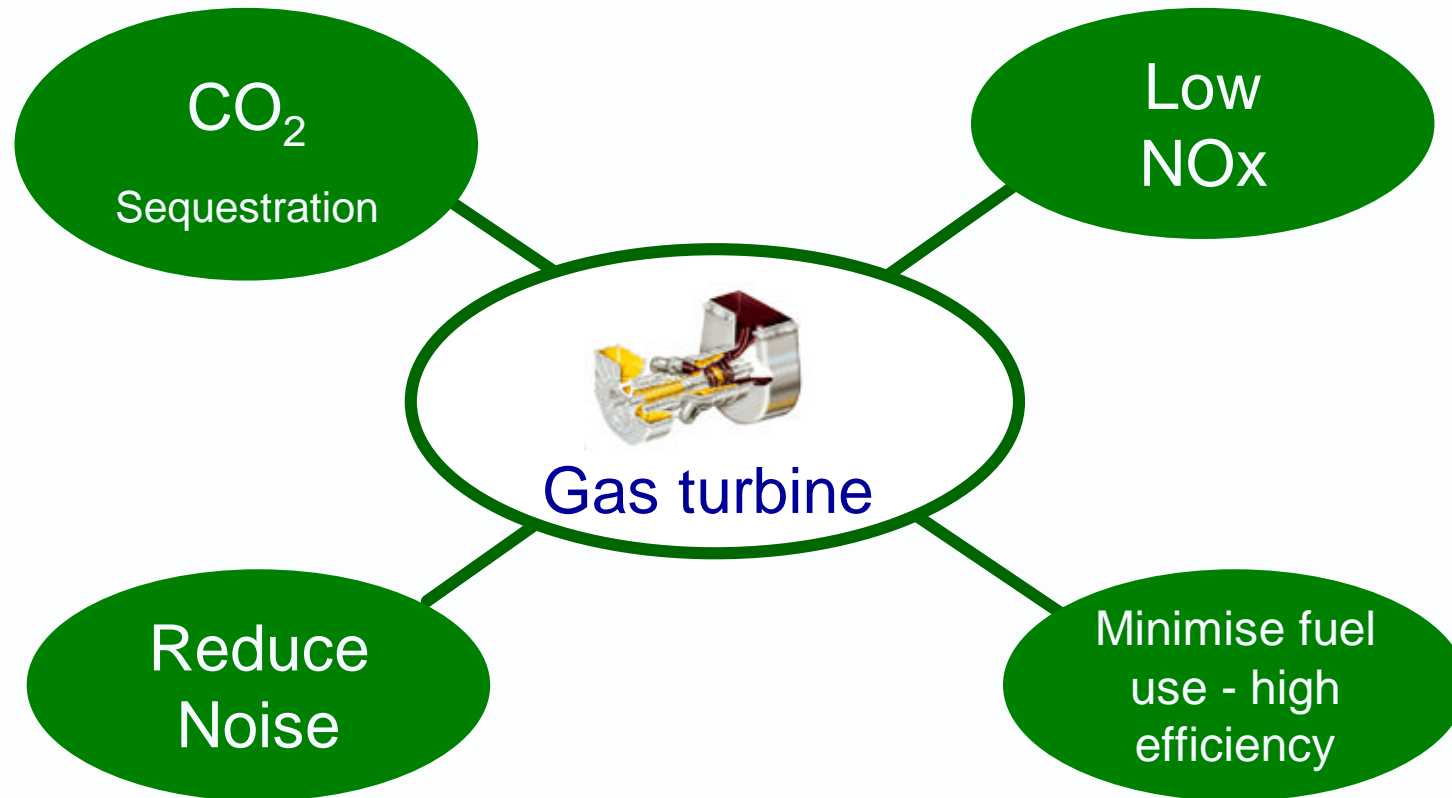


GT Fuels





Environment



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