



MINUTES OF THE BOARD MEETING BADEN, SWITZERLAND, 10-11 JULY 2012

Present:

Bernard Quoix, President (BQ)	TOTAL
Catherine Goy, Vice President (CG)	E.ON UK
Andy Williams (AW)	Wood Group
Gary Lock (GL)	Frazer Nash Consultancy
Giovanni Cerri (GC)	University Roma TRE
Jacques Maunand (JM)	EDF
Pericles Pilidis (PP)	Cranfield University
Robert Rijdsdijk (RR)	Shell
Christer Björkqvist (CB)	ETN
Julie Linde Kjeldsen (JK)	ETN

Apologies:

Herwart Hönen, Treasurer (HH)	RWTH Aachen
Uwe Kaltwasser (UK)	MTU

Content:

1. Welcome
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8. IGTC-12 Agenda and Speakers
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11. Hot Borescoping Project Meeting
12. Upcoming ETN meetings and events in 2012 and 2013
13. Closing of the Board Meeting

Annex: Review of Action list from previous Board meeting (Berlin, Germany, April 2012)

1. Welcome

B. Quoix opened the meeting and welcomed the Board members. H. Hönen and U. Kaltwasser sent their apologies for not being able to join the Board meeting.

2. Review and Approval of the MoM Berlin, Germany, April 2012

The Board unanimously approved the April 2012 Board Meeting minutes.

3. Review of Action List from the MoM Berlin, Germany, April 2012

See below for details and for all action in the Annex.

Gas briefing paper: The progress of the Gas Briefing Paper, based on the 2010 High Level User Meeting was discussed. The meeting, proposed at the previous Board meeting, between Frederique Chopin (EDF), Dieter Krapp (Shell) and Andre Mom (ETN), did not take place, given that Frederique Chopin believed his email clearly stated all EDF's concerns.

C. Björkqvist suggested that we make the paper available to our members as an outcome of a study. It was agreed by the Board to take a step approach. Firstly, the technical assertions and numbers in the paper should be verified. This should be done by someone with the technical expertise. ETN Project Board member, Peter Jansohn, was suggested as qualified expertise. This technical evaluation should be completed by September 2012. Once the technical findings have been verified the paper should be circulated to the participants in the 2012 High Level User Meeting, and discussed within that forum. The conclusions drawn from that discussion should then be incorporated in the paper, clearly stating that it "represents the *majority* of the market". Based on the reviewed and updated version of the paper the Board members will then take a final decision on the paper during the December 2012 meeting.

Action: AM to verify the technical assertions and numbers in the paper before end of September 2012. Peter Jansohn would be a good candidate to assist in doing so.

Action: CB to circulate the verified paper to the participants of the 2012 High Level User meeting, and to collect the outcome of their discussion on the paper, which should then be incorporated into the final version.

Action: the paper should be discussed at the December 2012 Board meeting, where a final decision of how the paper should be used would be determined.

4. Review of ETN Activities Update

In addition to the update report C. Björkqvist informed the Board that, since ETN now has a VAT number, a new colleague, Christiane Leonard has been hired to work 2 days a week in

the ETN office. She will deal with the implementation of the VAT rules and reports as well as other pre-accountant-related work which is expected to result in lower accounting fees.

Membership payments: C. Björkqvist reported on outstanding membership payments for 2011 and 2012. It was agreed to pass the debt of certain members on to a debt collecting company, and to keep pushing for the outstanding membership payments from other members directly.

EU funded projects: OMSoP and HYCOSOL: C. Björkqvist reported that both project proposals were favourably evaluated by the Commission services with the help of independent experts and exceeded the rating required to be eligible for funding. However, given budgeting limits the Commission is not currently in a position to fund the proposed projects. Both project proposals have been placed on a waiting list, which may be funded if additional funds, that are expected to be released in October 2012, will be sufficient. C. Björkqvist would lobby EC contacts to stress the importance of CSP hybridisation technology development, as well as emphasise the need for more clearly stated constructive feedback to the scoring of project proposals.

Action: C. Björkqvist to write and submit a paper to the EC, to promote the importance of CSP hybridisation and to express request for clearer evaluation feedback.

Exhaust Systems: the ETN project has been progressing successfully, however the next phase of performing a CFD Benchmark Case, requires additional funding. Total has offered that the test can be performed on one of their GE engines in Korea. Frazer-Nash and RWTH Aachen have also offered their support in form of in-kind work. The additional costs of carrying the project forward, estimated at approximately 300,000 euro, would be shared by industry partners. So far eight companies have expressed a preliminary interest to participate, namely GDF Suez, Statoil, Mjörud, Total, TechPart, Frazer-Nash, Siemens and Alstom. In addition, it remains to be ascertained whether GE is prepared to provide the required information about their engine, which is currently being debated with Total; as well as whether RWTH Aachen can carry out the necessary calculations within the set time limit (before January 2013).

Action: C. Björkqvist to follow up with the involved stakeholders in order to determine by August 2012 whether this part of the project would go forward.

Quarterly Newsletter Mailing list: the newly developed ETN public Quarterly Newsletter is intended to be circulated to the ETN membership as well as a broader audience. A list of external contacts (including potential ETN members) is currently being compiled, and will be circulated to the ETN Board members for approval.

It was also mentioned that it would be beneficial for the key active member of ETN organisations to receive an email listing the representatives from their organisation that are currently on ETN's general mailing list, so that they can make appropriate amendments or additions to it.

Action: C. Björkqvist to distribute the list of external contacts to ETN Board members for approval.

Action: C. Björkqvist to send an email to the main contact person of each member organisation, listing the representatives from their organisation which are receiving ETN material.

5. ETN Budget and Finances (2012-2013)

The finances of ETN had been presented by ETN Treasurer, Herwart Hönen at a pre-Board meeting teleconference as he could not be present at this board meeting. The conclusions drawn from the discussions were summarised by C. Björkqvist. In 2012 ETN is expected to make a small profit, even when setting aside 38,000 euro to a project development fund. However, in 2013, given that there is no International Conference taking place and that no additional EU project funding is expected (at least to date), a small loss is expected as well as for 2014 unless additional funding is received.

The importance of initiating new ETN projects was highlighted by the Board but it was also argued that it must be ensured that ETN has a self-sustaining budget, which enables it to fulfill its activities through its own finances. With the upcoming EC programme Horizon 2020 starting in 2014, it will be very important to provide the required lobbying and project development support for all new initiatives. It was therefore suggested by the Board members that this could be a good time to increase membership fees and also to propose a differentiation between SMEs (based on the EC official definition¹) and larger companies.

In order to receive approval for such a raise by the General assembly it was agreed that a clear communication should be circulated to members explaining the motivation behind the increase in fees, as well as the benefit it would result in. It has to be communicated and motivated to ETN members in such a way that it is understood that the increase in membership fees is to the members' own advantage, and that the benefits to them will likewise be increased. Moreover, it was agreed that ETN should investigate the organisational and financial structures of successful and well-established associations in Europe in order to draw on their experience.

The proposed level of membership fees from 2013 onwards were agreed to be:

Type of organisation	Previous membership fee per annum (€)	New membership fee per annum (€)
Non-profit organisations	800	900
SMEs	5,250	5,750
Large companies	5,250	7,500

Action: C. Björkqvist to draft a communication to ETN members, outlining the vision and the reasons for the proposed increase in membership fees, as well as the expected benefits. After approval by the Board, this should be circulated to the ETN general assembly.

Action: P. Pilidis to investigate the structure and set up of AeroSpace and Defence - ASD and C. Björkqvist to investigate other associations like EWEA (Wind).

Action: H. Hönen, ETN Treasurer, and C. Björkqvist to make a projected balance sheet for the coming 3 years taking into account the suggested increase in membership fees.

6. External Cooperation

Electric Power Research Institute (EPRI): A meeting between EPRI and ETN took place during ASME in Copenhagen, Denmark. The purpose of the meeting was to become acquainted with each other's organisations, and to discuss potential areas of cooperation. C. Björkqvist suggested a similar exchange of information cooperation as with ASME and POWER-GEN, for example an EPRI representative has been invited as a keynote speaker to ETN's IGTC-12. J. Maunand also informed the Board that EPRI had expressed an interest for their European-based office to become a member of ETN. EPRI has asked ETN to participate in a teleconference together with EDF and Iberdrola to discuss potential areas of cooperation. The Board questioned what a beneficial cooperation could look like. They agreed that it was good that a meeting had taken place but decided not to push for a wider cooperation at this stage.

Action: C. Björkqvist to participate in the upcoming teleconference and to check if EPRI fulfills ETN's membership requirements.

European Virtual Institute for Gas Turbine Instrumentation (EVI-GTI): A meeting between EVI-GTI and ETN took place during ASME in Copenhagen, Denmark to investigate potential areas of cooperation and overlap between EVI-GTI and ETN's activities on instrumentation. EVI-GTI is currently focused primarily on aero but would like to be more involved with stationary gas turbines. To explore the potential for cooperation C. Björkqvist and Chris Dagnall, chairman of ETN's project on Instrumentation, has been invited to hold a presentation at their upcoming conference in October 2012.

R. Rijdsdijk questioned why aero gas turbines was not covered within ETN, as this would allow for submittal of applications for projects in a wider range of funding schemes and calls for proposals. The Board agreed that this would be the case but as aero turbines are covered in the wider European association, AeroSpace and Defence, it could prove to be difficult. However, given that that is a very wide umbrella organisation, covering many technologies with national associations and clusters working on technical areas, it could be worth exploring. C. Björkqvist also informed the Board that both NLR and MTU aero are discussing potential membership with ETN which proves that there might be an interest.

Action: C. Björkqvist and C. Dagnall to explore a wider cooperation with EVI-GTI.

Action: P. Pilidis to further investigate the structure and activities on technical cooperation on aero gas turbines.

Dutch Gas Turbine Association (DGTA): ETN previously had a close partnership with DGTA, however following recent extensive turnover in the staffing of their secretariat

cooperation is now less active. Meetings have taken place to ascertain potential areas for further collaboration, however little progress has been made in this respect. It was mentioned by R. Rijsdijk that the purpose of the two organisations seemed to overlap extensively, and that a merger of some activities may be beneficial, to maximise the potential for collaboration and become more efficient.

GTUsers.com: C. Björkqvist suggested setting up a meeting with Yrjö Komakallio, who is running a number of user's conferences (9FA/FB, GT26, V94.3A, F6FA, F9E, F6B Europe). A. Williams reported that he knows him very well and agreed that this would be a good idea, and offered to participate in a teleconference call. It was also suggested to ask Yrjö for potential organisations to invite to our High Level User Meeting.

C. Björkqvist suggested that ETN could become the umbrella organisation of more focused technical organisations and national associations.

Action: A. Williams and C. Björkqvist to set up a teleconference call with Yrjö Komakallio.

7. High Level User Meeting and Dinner Debate

High Level User meeting: The meeting should commence with an introduction to ETN and a summary of what has changed in the last two years within the organisation, as well as the policy, market and technical environment in which it operates, since the last High Level User meeting.

It was suggested that the theme of the meeting could focus on benefits of an increased cooperation based on the fact that both companies and certain countries are struggling in financing R&D efforts in the current economic climate. The crisis could be viewed as an opportunity for wider industry collaboration as well as an opportunity to jointly try to secure external EU funding, rather than relying on internal funds. In this context, a goal of the meeting should be to prioritize requirements for future gas turbine developments.

It was agreed that a summary of the discussions should be circulated to all the participants after the meeting. This should summarise the discussions and conclusions drawn, as well as emphasise how ETN can assist in addressing the R&D collaboration needs which were highlighted during the meeting. As the event would be a great opportunity to recruit new User members to ETN, it was suggested that a list of invitees should be compiled and circulated to Board members, including a list of potential members, in order to insure that the right people are invited, and that no potential member organisations are excluded.

Action: C. Björkqvist to produce a draft invitation, and list of invitees (organisations and specific names) to be circulated to the ETN Board members for additions and approval.

Dinner Debate: it was proposed that the basis of the discussions at the dinner debate should be the role of gas turbines in the future, within the framework of reaching the EU's GHG emission reduction goals for 2050. The EU 2050 Roadmap has outlined various scenarios, by which an 80-95% reduction in CO₂ emissions can be achieved (97% in power production), which stipulate various roles for gas turbines. Gas turbines will either be used as a key supplier of power (with CCS employed to minimize emissions), or as a means to balance intermittency of increased levels of intermittent renewable energy sources.

The political mood in Europe increasingly seems to be that, in the age of austerity, deploying expensive renewable energy resources on a larger-scale is too expensive, when compared to the cheaper alternative of conventional resources. Europe is put in a weaker competitive position relative to third countries, which do not emphasize the green agenda. For example, in the current economic crisis, and with the recent shale gas revolution, the USA has already made it clear that gas turbine technology will play a key role in their future energy supply.

Policy makers in Europe have so far not indicated a similar inclination; however they have likewise not pushed through the previously debated increase in the target of CO₂ emissions reduction of 30% by 2020.

It was highlighted by G. Lock that industry needs an indication of the role that gas turbines will ultimately play already today, as this will influence the type of R&D and demonstration which needs to be undertaken – whether to focus on furthering CCS technology, or on flexibility and cyclic operation as a RES-backup.

To facilitate interaction and optimal networking during the dinner debate C. Björkqvist suggested assigned seating. Each table should be presented with a question which they will discuss during the first part of the dinner, and which will then be reported back to all of the attendees for a general discussion during the latter part of the dinner. At each table there should be an assigned chairman, who can assist in guiding the discussion, as well as report back to all of the attendees following the initial discussion at the table.

8. IGTC-12 Agenda and Speakers

C. Björkqvist presented the IGTC-12 agenda to the Board members, and explained the reasoning behind it. The Board suggested a number of changes and improvements to the agenda and speakers, which were incorporated into the latest draft. To view the latest version of the agenda please visit the [IGTC-12 website](#).

A. Williams pointed out that some of the discussions in the first keynote sessions tie into the themes of the High Level User meeting, and the outcome of the high level user meeting should be incorporated into the key note sessions by the chairpersons. Suitable chairpersons from User organisations for the keynote session still need to be identified.

Action: R. Rijdsdijk to contact Shell Vice President Mr. Christoffersen, and C. Goy to contact E.ON representative, either Head of Operations or Chief Manager of Fleet Managing Centre, to try to recruit them as chairmen.

During the session on *“Utilities Demands for the Next Generation of Gas Turbines”*, a speaker to represent the German/North European view remains outstanding. Possible organisations were suggested as either EnBW or RWE.

Action: C. Björkqvist to identify potential representative for the German/North European view.

The second day of the conference would commence with a short introduction by C. Goy as ETN Vice President, and thereafter a summary of the panel discussions from the previous day by A. Mom, as ETN President Emeritus, as an introduction to the OEM panel session. It was agreed that the OEM session should consist of 3-4 OEMs of larger frames and it was suggested to invite the following delegates as a first choice (Yves Menat, GE Energy; Uwe Pagenkopf, Siemens; Ichiro Fukue, MHI and Michael Ladwig, Alstom; and 3 OEMs of smaller frames (GE Oil&Gas delegate tbc; Solar delegate tbc; Chris Floyd, RR).

Action: B. Quoix and R. Rijdsdijk to identify suitable speakers from Solar and GE Oil & Gas.

It has been agreed that specific questions should be sent to the OEM's before the session. A couple of questions for the OEM session were suggested:

- 1) What role will gas turbines play in a low carbon 2030 and 2050 scenario?
- 2) What is the one game changing gas turbine policy decision or technology advancement that would have the greatest impact on our ability, in the current and future dynamic market place, to meet the environmental / emissions targets set by leading Governments and why?
- 3) Which areas of fundamental research topics are you willing to collaborate on in future R&D programmes?
- 4) The need for multi-starting frame engines used in electrical power generation looks set to increase. How is this affecting the design of new engines and will present service intervals be affected?
- 5) What is your strategy for extending outage periods beyond the current typical 24k uninterrupted hours between hot gas path inspections?

Action: C. Björkqvist to circulate information on the IGTC-12 to ETN Board members, in order for them to recruit remaining chairpersons, panelists and sponsors.

Action: Additional questions or suggested modification to the above questions to be sent to ETN.

9. Panel Discussion CFD modelling to support operational, environmental, and economic decisions at ASME

P. Pilidis reported on the outcome of the ASME conference panel session "*Power plant modelling to support environmental, operation and economic decisions*", which he chaired, and where H. Hönen represented ETN (as well as RWTH Aachen). Other participants in the panel included TU Berlin, Cranfield, NASA and AVIC of China. The session commenced with examples of when simulation had been useful, and thereafter went on to a discussion. There was a lot of emphasis on the importance of validation and the confidence in the results.

C. Björkqvist reported that subsequently, a lot of organisations involved with CFD have shown an interest in ETN activities. An increase focus on this topic could maybe be used to bring in these potential members. These potential members could also assist in presenting successful business cases for CFD modeling, and disseminate it to a wider audience, to spread awareness and understanding of the big reduction in costs it could offer.

To boost CFD activities and awareness within ETN P. Pilidis will write an article summarizing the debate for ETN and an interview with P. Pilidis is to be published in the October/December 2012 Quarterly Newsletter. Professor Hirsch of Numeca has also been invited to hold an overview presentation of the general opportunities and benefits CFD at the IGTC-12.

Action: P. Pilidis is to write an article and be interviewed for the ETN Quarterly Newsletter on CFD modelling to support operational, environmental, and economic decisions.

10. ETN Project Board Meeting

C. Björkqvist informed the Board about the plans for the upcoming Project Board meeting, to be held at E.ON Sweden on 24 July 2012. The Board suggested that the Project Board members should create a portfolio of ongoing ETN projects and potential future projects, also specifying which may be eligible for EU-funding. It was recommended that they should critically review the various projects, provide feedback and assist in making the project more robust and attractive.

J. Maunand also suggested that the Project Board members should produce a study with insight into which gas turbine developments they envision in the future.

It was stressed that the minutes of Project Board meetings should be circulated to the ETN Board. Moreover, R. Rijdsdijk suggested setting up a meeting between the ETN Board and Project Board soon, in order for them to become better acquainted.

C. Goy mentioned that within E.ON there is a division between the themes of: availability, reliability, efficiency, power output, safety, cost, environment and flexibility. These are themes which could be transferred and integrated into the ETN framework. C. Goy suggested that the Project Board should ensure that projects exist to address concerns within each of these themes.

Action: C. Björkqvist to bring forward the Boards recommendations to the Project Board.

11. Hot Borescoping Project Meeting

J. Maunand reported that the objective of this recently initiated ETN initiative is to reduce the time of outage time, by enabling boroscope inspections at higher temperatures. An initial meeting with the project group was held at EDF in Paris, France on 9 July 2012. The meeting was successful, although it was not attended by any OEM representative, which would have been needed in order to provide further insight into the hot environment. The current goal of the project is to compile a good project outline with a business case, which can be circulated to the ETN membership after a review by the Project Board. A. Williams offered to add his insight to the proposal.

Action: C. Björkqvist to discuss the proposal at the Project Board meeting and to circulate the project outline to A. Williams.

12. Upcoming ETN meetings and events in 2012 and 2013

High-Level User Meeting	16 October 2012	Brussels, Belgium
IGTC-12	17-18 October 2012	Brussels, Belgium
Board meeting	6 (3-6PM) – 7 (9AM-4PM) December 2012	London, UK
H ₂ -IGCC meeting	10-11 December 2012	Berlin, Germany
Board meeting Teleconference	(Date tbc) February 2013	Teleconference
Board meeting	15 April (morning)	Pisa, Italy
AGM and Workshop	15-16 April	Pisa, Italy
Board meeting	8-9 July 2012	tbc

Action: G. Lock to arrange room at IMechE for 6-7 December 2012 in St James Park, London, UK; as well as to book a dinner venue.

13. Closing of the Board meeting

B. Quoix closed the Board meeting, and thanked Andy Williams for hosting the meeting.

ACTION LIST

No	Action	Responsible
1	AM to verify the technical assertions and numbers in the Gas Briefing paper before end of September 2012. Peter Jansohn would be a good candidate to assist in doing so.	AM
2	CB to circulate the verified Gas Briefing paper to the participants of the 2012 HLU meeting, and to collect the outcome of their discussion on the paper, which should then be incorporated into the final version.	CB
3	The Gas Briefing paper should be discussed in December 2012, and a final decision on how the paper should be used will be made.	Board
4	C. Björkqvist to write and submit a paper to the EC, to promote the importance of CSP hybridisation and to express request for clearer evaluation feedback.	CB
5	C. Björkqvist to determine by August 2012 whether Exhaust Systems initiative should go forward.	CB
6	C. Björkqvist to distribute the list of external contacts to Board for approval.	CB
7	C. Björkqvist to send an email to the main contact person of each member organisation, listing the representatives from their organisation which are receiving ETN material.	CB
8	C. Björkqvist to draft a communication to ETN members, outlining the vision and the reasons for the proposed increase in membership fees, as well as the expected benefits. After approval by the Board this should be circulated to the ETN general assembly.	CB/Board
9	P. Pilidis to investigate the structure and set up of AeroSpace and Defence - ASD and C. Björkqvist to investigate other associations like EWEA (Wind).	PP/CB
10	H. Hönen, ETN Treasurer, and C. Björkqvist to make a projected balance sheet for the coming 3 years taking into account the suggested increase in membership fees.	HH/CB
11	C. Björkqvist to participate in the upcoming EPRI teleconference and to check if EPRI fulfills ETN's membership requirements.	CB
12	C. Björkqvist and C. Dagnall to explore a wider cooperation with EVI-GTI. P. Pilidis to further investigate the structure and activities on technical cooperation on aero gas turbines.	PP/CB
13	A. Williams and C. Björkqvist to have teleconference with Yrjö Komakallio.	AW/CB
14	C. Björkqvist to produce a draft invitation, and list of invitees (organisations and specific names) to be circulated to the ETN Board members for additions and approval.	CB /Board
15	R. Rijdsdijk to contact Shell Vice President Mr. Christoffersen, and C. Goy to contact E.ON representative, either Head of Operations or Chief Manager of Fleet Managing Centre, to try to recruit them as chairmen for the IGTC-12.	RR/CG
16	C. Björkqvist to identify potential representative for the German/North European view for the IGTC-12.	CB
17	B. Quoix and R. Rijdsdijk to identify suitable persons from Solar and GE Oil & Gas to invite to the OEM panel session.	BQ/RR
18	C. Björkqvist to circulate information on the IGTC-12 to ETN Board members, in order for them to recruit remaining chairpersons, panelists and sponsors.	Board

19	Additional questions or suggested modification to the IGTC-12 OEM panel questions to be sent to ETN.	Board
20	P. Pilidis to write an article and be interviewed for the ETN Quarterly Newsletter on CFD modelling to support operational, environmental, and economic decisions.	PP
21	C. Björkqvist to bring forward the Board's recommendations to the Project Board.	CB
22	C. Björkqvist to discuss the proposal at the Project Board meeting and to circulate the project outline to A. Williams.	CB
23	G. Lock to arrange room at IMechE for 6-7 December 2012 in St James Park, London, UK; as well as to book a dinner venue.	GL

ANNEX

Actions (from April 2012 Board meeting)	Outcome / Next action	Responsible
ETN membership discussion with Ronnie Glen at Scottish & Southern Energy.	<i>Pending.</i> To be completed in August 2012.	AW – Aug 2012
Board members to propose 1 question for OEMs during the IGTC-12 keynote debate, to be sent to the ETN Office before July 2012 Board meeting.	<i>Ongoing.</i>	Board – Aug 2012
Suggest nominee from the Oil & Gas industry for the Project Board.	<i>Done.</i> Heikke Oltedal, Statoil, is now a member of the Project Board.	CB
A. Mom to contact Frits De Jong of Turbocare about ETN membership.	<i>Ongoing.</i> Frits De Jong has been briefed, but final answer is pending. B. Quoix is meeting Frits De Jong in September	BQ – Sep 2012
U. Kaltwasser to meet with Bo Pedersen of Maersk to discuss ETN membership.	<i>Ongoing.</i>	UK – Sep 2012
B. Quoix to contact BP representatives in Houston, US.	<i>Ongoing.</i> BQ will go to Houston in September and will identify the correct person to approach then.	BQ – Sept 2012
ENI membership of ETN.	<i>Ongoing.</i> B. Quoix and R. Rijdsdijk both to send an email from Total and Shell to Pasquale Bove of ENI.	BQ/RR – Aug 2012
C. Björkqvist to hold meeting with representatives of the Swedish government,	<i>Done.</i> The meeting was successful, and an application for 90,000 euro has been submitted. Waiting for outcome of the application process.	CB
C. Björkqvist and H. Hönen to have a meeting with ETN's tax lawyer to discuss the impact of applying for a VAT number.	<i>Done.</i> Based on a cost/benefits analysis it was decided to apply for a VAT number. Now approved.	CB, HH
C. Björkqvist to install mirror server in external location.	<i>Ongoing.</i> A mirror server is in place, but automatic updating is outstanding.	CB – Aug 2012
C. Björkqvist to present a list of the ETN external contacts to receive the ETN public Quarterly Newsletter.	<i>Ongoing.</i> Will be circulated to the ETN Board members by email.	CB – July 2012