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Trip Report:

IEA Task 27 meeting in Grenoble, France

By: ***Dragan Curcija***

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Trip Report

IEA Task 27 was held in Grenoble, France from May 15 to 17, 2000. The meeting was held in Hotel Mercure near downtown Grenoble. Accommodations were offered in the same hotel where the conference was held, which was very convenient. The conference facilities were very good, and were located on the second floor of the hotel. One larger room and one smaller room were utilized through the course of the meeting. Larger room was used for plenary sessions and part of the room was used for breakout sessions.

Michael Kohl from Fraunhofer Institute in Freiburg, Germany, Task 27 operating agent, opened the meeting at 9 a.m. on May 15 and Jan-Luc Chevalier gave welcome speech at the opening of the first plenary session. Agenda for the meeting is attached to this report. After the discussion about funding situation and participation level, each project leader presented short overview of planned accomplishments and overview of projects. This was followed by plenary discussion and plan for breakout sessions.

After lunch I have attended first breakout session on project A1, which is lead by Werner Platzer from Fraunhofer Institute (Minutes from this meeting are attached to this report). The session started with each participant stating priorities and opinions about the work planned for the next four years. Because of the relatively high attendance this took about one hour, which was 2/3 of allocated time for A1 breakout discussions. At the end of this exercise, there was not a clear direction what will be our specific tasks in the next four years. The discussion about this followed, and the session had to be interrupted because we ran out of time. The recommendation was that Werner will send out a questionnaire about the computer tools to be completed by all participants. There was no discussion about test methods or standard related work.

For the second breakout session, I had attended parts of A2 and B1. At the B1 session, I discovered that my potential interest in the development of analytical methodology in predicting durability of IGU is more appropriate for B4 (new C3) because of the emphasis of B1 on materials, and new C3 on systems performance. During the A2, I mostly observed discussions and provided clarification on the capability of THERM program to predict temperatures due to both temperature and solar radiation effects. Consequently, I was asked if I could simulate a specific product using THERM and provide temperature field as a result. I couldn't reject such an interesting request, so I will be providing small contribution to the task where I didn't think I had much interest.

Third breakout session (B2 and C2) didn't have anything that was of my interest, so I didn't attend them.

Second day started with the A3 breakout session (concurrent session was also C1), which I attended and agreed to participate in the first, so called case study on shading devices and attachments. My intention for this task is to provide new methodology for calculating solar heat gain of shading devices, using first principles approach. No specific projects were identified at this time, but the tasks (case studies) were more clearly defined and milestones table was updated. The session was extended into the time slot for informal discussion group, which gave us some more precious time to discuss plans for this project.

Last breakout session was B3, and informal discussion group, which I mostly spent on A3. In the afternoon, we had scheduled visit to CTSB in Grenoble (see attached pictures of lab

facilities), followed by visit to a monastery and their distillery. At the end we had dinner, hosted by French Ministry of Energy, which took place in a very nice restaurant in mountains. The ride to the restaurant was spectacular, and included bus ride at an altitude of over 2,000 m (6000 ft.) Views were spectacular, and we had view of downtown Grenoble more like from an airplane than from a bus.

Last day was Wednesday, May 17 and it started with Plenary session and project summaries by project leaders (PL), including the milestone schedule and update of Task 27 plan. This was followed by general topics that included presentation of the web site that will be used for the distribution of reports, announcements, and other document management tasks. It was agreed that there is going to be public part of the web site accessible by wider audience, including ExCos, and that there is going to be private part for specific project discussions and distributions which are going to be restricted only to active participants of the project. Issue of confidentiality was raised among other things, and that was an additional reason to have protected parts of the web site. Future meetings were discussed and place was selected for the next and 3 following meetings. The next meeting is scheduled for Delft, Netherlands (10/2 – 10/4/2000), followed by Berkeley, USA (week of 3/26/01), Rome, Italy (week of 10/8/01) and as yet unspecified place (4/15/02).

I have suggested that future meetings have much more time for individual project discussions (breakout sessions), with half day for each project minimum, and that more concurrent session take place (i.e., three instead of two), taking care that within concurrent sessions be from different subtasks, because most of people are dedicated to one of the subtasks. This was agreed to in principle. The meeting was adjourned at 2:30 p.m.

Observations:

The gathering of so many experts from different countries was quite impressive and it certainly indicates that we can expect good outcome of this coordinated international research. It was recognized that we don't have too much time until the next meeting in Delft, so the work needs to start right away. On the negative side, it seems to me that in many areas work tasks are not clearly defined, and that we (as a group) are still searching for specific projects that we all agree on. This is my first IEA Task, so I am still trying to find the right way to affect things and be productive, and I am not sure if I have any better idea about the process after this meeting than I had before. I have proposed two specific projects that I feel are important, in the area of performance assessment (Condensation Resistance and Projecting Products performance assessment), which are also high on priority list in my regular research, and I will continue to work on those, but I am not sure how is that going to mesh with other projects or case studies. I hope that the link will naturally become clear as we proceed forward.

Action Items:

1) Send interesting material for the EuroSun paper (paper on Task 27 work)
2) Coordinate better definition of work items in A1 with core group (Augusto, Dick, Werner, myself)
3) Send requirements for input data to simulate electrochromic IGU to Helen Wilson Rose
4) Respond to requests as they arrive

5) Define in more detail what kind of research needs to be done and what is my contribution for Condensation Resistance and Projecting Products tasks

6)

Attachments:

IEA-SHC-Task27, "Performance of solar facade components"

Agenda for the 1st Meeting

May15-17th , Grenoble, France

Monday, May, 15th:

9:00 Welcome

General Comments:

- Funding situation and interaction with ExCo
- Participation level and Task Structure
- Industry involvement

10.00 Project presentation (15 min. each)

Plenary discussion of future activities

12.30 Lunch

Project discussion groups in parallel

Rooms: "Pleniere"	"Sous commission"
14.00 A1	B4
15.30 Coffee break	
16.00 A2	B1
17.30 B2	C2

End of day

Tuesday, May,16th

9.00 A3 C1

10.30 Coffee break

11.00 B3 Informal discussion group

14.00 Lab-tour at CSTB

finished by a Hosted dinner

Wednesday, May, 17th

9.00 Plenary presentation of the future work by Subtask and Project leaders (15 min. each)

- Milestone schedule
- Reporting practice

12.00 Lunch

13.30 **General topics:**

- Management
- Web-Site
- Task Brochure
- Eurosun-Presentation
- Events, meetings , conferences
- Next meeting in October 2000

  Proposed host: LBNL; Berkley, USA
- Meetings in 2001
- Other business

15.00 Coffee and end

Grenoble Meeting 15th-17th May 2000

Minutes: Project A1: Energy Performance Assessment

Within the project session mainly the different background and views of the participating institutions were discussed in order to sort out a possible task split up for future development of the Energy Performance Assessment Methodology (EPAM). An important question for an EPAM is the system boundary. Depending on the background of the participants the importance of the building, user patterns for the evaluation of the facade performance is differently percepted. General agreement is that one would like to concentrate on the product and only allow the building aspects enter the field in a restricted way. Possible this can be done by considerung „typical“ cases.

1) Discussion on participant interests and background

Lone Møller
model in between building and component needed
comfort is very important
daylight and energy are related
treat combination of products, especially window and shading

Karsten Duer
not so complex model needed
cooling load has to be considered even in Denmark nowadays
scope: chromogenics, ventilation, blinds

Jean Rosenfeld
not a full building model to be developed
take simple standard rooms for evaluation
pattern of usage is important to get realistic values
end users are very individual

Arne Roos
presentation of simplistic Uppsala tool (web site)
tool treating windows with coated glazings
approach with balance temperature characterizing the building
cooling need can be inferred, validation needed

Augusto Maccari
world is not so simple

main interests in shading devices (cooling , daylighting, cooling)
how many numbers are necessary for angular decay?
step 1: investigate characteristics of windows
step 2: define skeleton of model for performance assessment

Dragan Curcija
window should be treated as "extended component"
working on condensation performance and localised properties
computer-modeling of component (2D, 3D)
convection models
interest also in window attachments (screens, blinds)

Geraldine Corredera
interest in comfort and energy consumption
economical considerations
validation of models and criteria for use
how accurate must a prescription be?
user issues are related to contol strategies
cooperation with sociology people
response dependent on building types

Richard Mitanchey
office daylighting needs
bidirectional properties used
climatic and surrounding description important for perfomance
3-D-optical models
interest in validation with experiments

Magali Bodart
facade cannot studied without building
choice of glazing depends on lighting system
shading devices control
double skin facade performance related to ventilation
link to HVAC necessary

Aldo Fanchiotti
predicting building performance is extemely complex
selection of ideal tool is not possible
compromise between accuracy and generality needed
accuracy in desired physical properties not to be negelected
rather give up generality of building, use typical situations
(limited number of buildings, climate, occupancy patterns ...)

Dick van Dijk

priority should be component level
CEN/ISO have modern algorithms to be used
aim is not guidebook for architects

Michael Köhl/Bo Carlsson
relation of A1 to durability projects open
need for performance indicators dependent on material properties
first example : influence on sealants on performance

2) Discussion of user of tool

It si important for the development of an EPAM to have the
possible users: task27 experts, engineering offices, manufacturers, architects, end-users
Lone expressed the wish that the tool could be used by manufacturers.
Dragan emphasized that easy to use tools do not imply simple models.
the group does not want to do compute-tool development but wants to develop the general methodology
There was a general feeling that the method is targeted for technically educated persons (engineers, trained personal, technically oriented architects), not design people.

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Pictorial:

Figure 1. First we worked very hard on solar optical properties of new generation of coatings

Figure 2. Then we worked even harder on properties of certain fluids

Figure 3. Beautiful views near the Chamrouse Monastery

Figure 4. Some more breathtaking views

Figure 5. Old Building in Downtown Grenoble – Beautiful Windows and Architecture

Figure 6. Some More Views of the Building and Windows

Figure 7. French Cider and French Food at CTSB, What Else Could You Wish For…

Figure 8. Integrating Sphere at CTSB (two other pictures from here were lost…)

Figures 8 to 13. Materials Testing Lab at CTSB

Figures 14 to 19. Continuation of Materials Testing Lab at CTSB

Figures 20. Materials Testing Lab at CTSB – Moisture Transfer Measuring Apparatus