



Other Collaborative Accelerated Pavement Testing Activities

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Topics

- TRB
- COST347
- FHWA



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Collaboration - WHY?

- **More effective use of limited funds and time – reduce duplication**
- **Better overall results can be obtained**
- **Working together more effective than unco-ordinated efforts**
- **Co-ordination of work to accomplish different appropriate aspects of same experiment - complementary.**



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TRB Committee AFD40



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- APT Workshop Session 1995
- Task Force A2B52 1996
- Committee A2B09 2001
- Committee AFD40 2003
- Chair - Prof. Joe Mahoney
- AFD40(1) International Conference
- AFD40(2) APT International Alliance

AFD40(2) Subcommittee

APT International Alliance



- Act as an international APT users group
- Establish mechanisms for funding, monitoring and completing studies of common interest
- Members of the Subcommittee shall represent a broad spectrum of international APT owners and operators.
 - Membership is open to any full scale APT or test track owner and/or operator.

TRB AFD40 efforts



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- APT Survey
- Transportation Research Circular E-C 004
 - ‘Interim Report on Accelerated Pavement Testing (APT) Data Survey’
- 1st Int’nl Conference Reno, Nv 1999
 - www.t2.unr.edu/conference/index.html
- TRB Millennium Paper
 - ‘Full-Scale/Accelerated Pavement Testing: Current Status and Future Directions’
- NCHRP 10-56 APT : Data Guidelines (Report 512)

TRB AFD40 efforts



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- NCHRP Synthesis 325 : Significant Findings of FS/APT (Hugo,Epps)
- 2nd Int’nl APT Conf. Minneapolis, Mn 2004
- 3rd Int’nl APT Conf. Spain 2008
- Home page :
<http://www.ksu.edu/pavements/trb/A2B09/index.htm>
- Research Needs Statements
 - Effect of Environment/Time on APT Results (NCHRP Project - 10-66 Metcalf et al.)
 - Pavement Instrumentation of FS/APT Facilities
 - National FS/APT Database

Other US APT Collaboration efforts



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- Westrack
- FHWA/CRREL (Denmark, Finland, MnRoad)
- MnRoad (Ill, Oh, CRREL)
- SPTC (Ca, Mn, Tx, Wa)
 - pavements.ce.washington.edu/sptc
- CRREL – Subgrade study - 17 states PF
- Midwest Pooled Fund (Ia, Ks, Mo, Ne)
- NCAT – 9 states, FHWA
- IPRF – non-profit (ACPA, PCA, NRMCA)



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EU COST 347 Forum

- Established 2000 - ran until 2004 – now becoming FEHRL group
- Objective:
 - To develop a European code of good practice to optimise the use of Accelerated Load Testing facilities and improve the application of results from these facilities

COST 347 Final Report



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- ALT inventory
- Previous and current research
- ALT versus RLT
- Common code of good practice
- Future use of ALT
- Appendices

EU COST 347 Efforts

- Documents
 - WP reports
 - Final report
- Common code of good practice for the use of ALT
- Future topics for ALT research
- Papers, articles
- Seminars
- International relations

ALT MATTERS
Issue 3 – Special Conference Edition: BCRA, Lisbon and ICAP, Copenhagen

In this Issue:

Welcome to this Conference edition

ALT Editorial
by Chairman Gregers Hildebrand, Danish Road Directorate, Danish Road Institute

Getting to a professional conference is often synonymous with a tight schedule to get to hear as much as possible and to talk to as many colleagues as possible. Both BCRA and ICAP provide many opportunities to meet people and to listen to an impressive number of high-quality presentations on very interesting topics. For a change, why not allow yourself to sit in at a presentation which may not deal with your favourite topic, just for the outside chance that this is the place where you get that single new idea, which made the trip worthwhile. Obviously, I hope that the new idea will involve ALT!

Finally, an invitation to all readers: At the ICAP in Copenhagen, COST 347 in co-operation with the US Transportation Research Board Committee A2B09 on Full Scale/Accelerated Pavement Testing have arranged a workshop on ALT. We hope to see you there for an exciting afternoon full of ALT discussion. Please see the announcement box at the end of the newsletter for details.

Contact: Chairman of COST 347: Gregers Hildebrand - ghilde@dki.dk
Editor of ALT MATTERS: Mike Nunn - munn@atri.co.uk

Instrumentation for ALT
Andrew Dawson, University of Nottingham, UK
(Member of Working Group 1 of COST 347)

Accelerated load testing of pavements is practised to observe the performance of pavements and, usually, this observation isn't limited to what we can see on the surface. Although the rutting and cracking seen at the surface is important, engineers want to know why these distresses have occurred, and answers to questions such as - *What layer of the pavement is causing distress? How will modifications to the soil affect performance?* and, *What is the relationship between behaviour of this material to the road and in the laboratory?*

These questions, and many more, can only be answered if we know what is happening inside the pavement. We may be able to guess from observation of the pavement surface but, to be sure, we need to observe within the pavement. To help us do this there are a wide range of instruments, which can be built into the road or installed after construction. There are instruments for stress, strain, deflection, temperature, moisture and suction and they are available in a variety of forms that are suitable for installation in asphalt, concrete, aggregates, soils and secondary materials.

One of the activities of Working Group 1 (WG1) of COST 347 has been to collect the experience of instrumentation by ALT operators. The final report is available via the web-site (www.pave-test.org) by going to the inventory report on instrumentation on the database page. WG1 has undertaken a diverse scientific approach across the 15 respondents to its survey.

Find out more
www.pave-test.org
is a portal to the web sites of the COST Action 347 in Europe and the A2B09 Committee of the TRB in the USA. It also has pointers to most of the web sites offered by establishments with ALT/APT facilities.
If you know of a useful web site that is not mentioned, please contact
Andrew Dawson at andrew.dawson@nottingham.ac.uk



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Benefits from COST 347

- Harmonisation of European efforts within the field
- Improved methods for pavement design
- Transfer of knowledge within Europe
- Improved co-operation with parallel international activities



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Europe

- Circular
 - ETHZ (CH)
 - LCPC (F)
 - LIRA (ROM)
 - KSD (SK)
- Pulse loading
 - BASt (D)
 - TU Dresden (D)
- Linear
 - LAVOC (CH)
 - RTM (DK)
 - CEDEX (E)
 - Oulu (FIN)
 - LINTRACK (NL)
 - HVS-Nordic (FIN/S)
 - TRL (UK)
 - U Nottingham - PTF (UK)
 - U Nottingham - HLF (UK)

FHWA

- HVSIA – Pooled Fund Study (Caltrans/FDOT)
- FHWA – APT PF Study
- Meeting Aug 2004 Woods Hole
- Consortium of Accelerated Pvt. Testers (CAPT)
- 2nd Meeting June 2005 Washington DC



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CAPT - 2004



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- FHWA, TRB, NCHRP, California, Florida, Illinois, Kansas, Minnesota, Texas
- *“Conduct collaborative studies to provide solutions to mutually agreed technical issues and improve the efficiency and effectiveness of APT facilities with the ultimate goal of improving infrastructure performance.”*

CAPT - 2004



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- Collaboration breaks down into two elements.
 - The first is basically to share best practices, data analysis, instrumentation, and other similar subject matter.
 - The second is to identify the types of subject matter for the next round of experiments, see who is interested in actually collaborating in the experimental design.

CAPT – result of Aug. 2004 meeting

- **Pooled fund study for U.S. participants through FHWA**
(managed by TRB)
- **Tie-in with other groups**
 - COST Group, Europe
 - Frozen Four, U.S. (MN, IL, WS, MI)
 - HVSIA
 - AFD 40



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CAPT – results of June 05 meeting

- FHWA to initiate Pooled Fund for CAPT by Sept. 2005 - \$12,500 p.a.
- Current operators – FHWA, Ca., Fl., Ks., Mn., NCAT, Tx., Va.
- Expect more states to get involved
- Planning to extend to international operators



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CAPT – results of June 05 meeting

- ExCo – owners that participate at PF funding level
- Charter to be developed
- Each meeting will have a theme
- Will identify a continuing agenda
- Promote technology sharing, experimental design and collaboration
- ‘First’ meeting October, 2005 in NH



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Collaboration requirements

- Common interests
- Common goals
- Shared costs and benefits
- Significant effort by all
- **Adequate funding**
- **Other?**



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