CEC 2008 - Developing Fuels and Lubricant Tests for the European Automotive industry

BASE OILS AND LUBRICANTS
IN RUSSIA AND THE CIS - Moscow April 2008

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Managing Director of Kuwait Petroleum R&T

CEC

the Co-ordinating European Council for the development of performance tests for transportation fuels, lubricants and other fluids

CEC

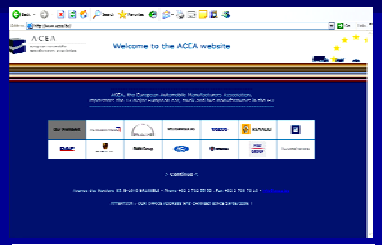
CEC is an Industry-based organisation for the development of Test Procedures / Methods:

- Automotive Fuels, Engine Oils & Transmission Fluids
- Marine & Large Engine Oils
- Two-stroke Engine Oils
- Associated Bench Tests
- Industrial & Hydraulic Fluids

European industry organisations involved

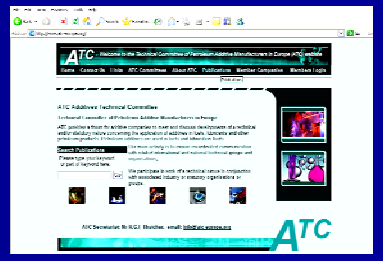
ACEA: *www.acea.be*

Association des Constructeurs Européens de l'Automobile



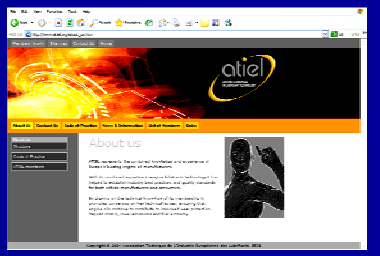
ATC: *www.atc-europe.org*

ATC is the organisation of Europe's additive manufacturers



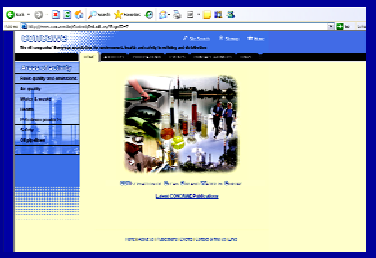
ATIEL: *www.atiel.org*

ATIEL is the organisation of Europe's leading engine oil manufacturers

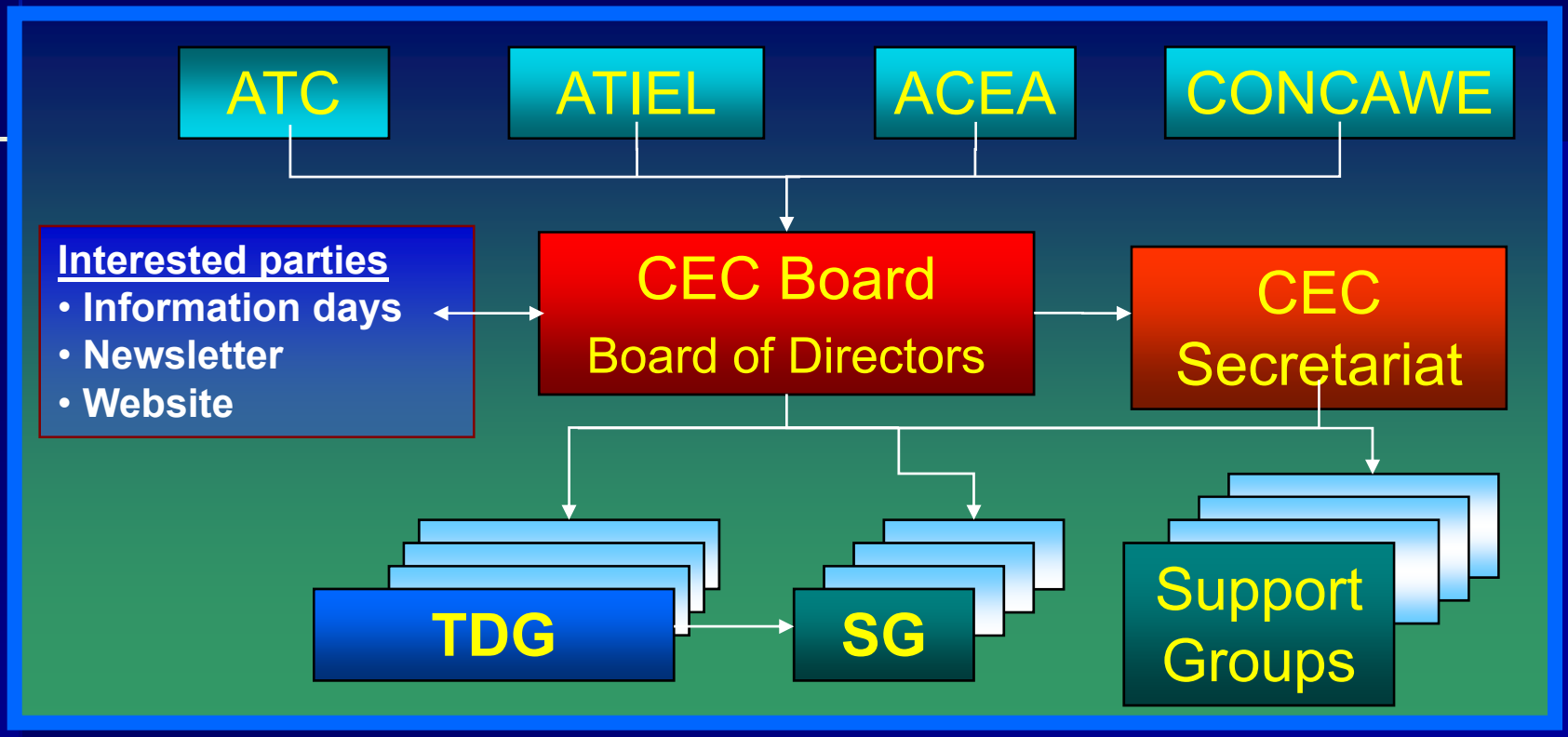


CONCAWE: *www.concawe.be*

The Oil companies' European association for environment, health and safety in refining and distribution



CEC Organisation



Articles of Association	Bye-Laws	Guidelines	Test Methods
Legal requirement	Constitution	How to operate	End result

CEC Secretariat

- Secretarial & administrative support to Management Board
- Finance, Legal and Accounts
- Support to all CEC Groups
- Maintenance, updating and sales of Test Methods
- Maintenance of CEC's secure Web Site and information to stakeholders.
- Helpdesk facility
- Organisation of CEC Conferences

CEC - Website: *www.cectests.org*

TDG - Test Development Group

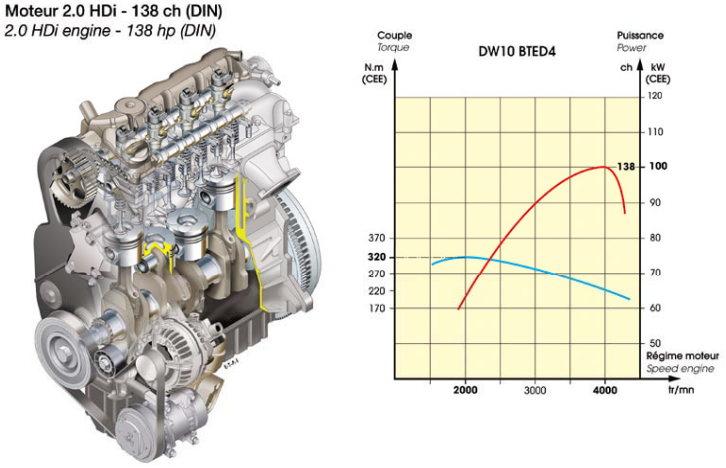
- Template for Acceptance –from ACEA, ATC, ATIEL or Concawe.
- Financing & Stakeholders > flexibility
- All results Confidential to Group – Meetings & Documents restricted to active members only
- Sale and use of Test Method once developed is up to Group to decide, with approval by the Management Board
- After completion > SG - Surveillance Group

Recent Test Developments

- F-098 – Injector Fouling in Direct Injection Diesel Engines (DW10)
- L-099 –Diesel Engine Wear Test (OM646LA)
- L-101 - Piston Cleanliness and Bore Polishing Test (OM 501LA)

F-098 - Diesel Injector Fouling Test (DW10)

- PSA DW 10 Euro 5 diesel engine with common rail fuel injection at 1600 bar
- Cyclic test methods including hot soak periods
- No power loss with conventional EN 590 diesel fuel
- Approx. 12% power loss with calibration fuel
- Sensitive to B10 Biodiesel fuel
- Round robin is complete, finalising the test method and precision statement



Engine :
DW10BTED4 10YVD SIEM

L-099 - Diesel Engine Wear Test (OM646LA)

- Replacement for OM602A in ACEA and for OM611LA in Mercedes-Benz (MB) in-house specifications
- Cam wear is main parameter for ACEA
- MB parameters include – Piston merits, Cylinder, Ring, Timing chain and Bearing wear, Viscosity increase, Bore polishing and Engine sludge
- B5 Biodiesel used
- 300 hours cyclic test
- Min. 3% soot in oil required at EOT
- Round robin being evaluated to confirm test suitability for cam wear

OM 646 LA - Euro V
- Engine type: R4 CDI
- Capacity: 2.2 l
- Power max: 110 kW
- Torque max: 340 Nm

L-101 - Piston Cleanliness and Bore Polishing Test (OM 501LA)

- Replacement for OM441LA in ACEA and Mercedes-Benz (MB) specifications
- Piston merit is main criteria for ACEA
- MB parameters include - Engine sludge, General engine deposits, Bore polishing, Cylinder wear, Ring sticking and Oil consumption.
- B5 Biodiesel used
- 300 hours cyclic test
- Round robin being evaluated to confirm test suitability for piston merit

OM 501 LA - Euro V
- Engine type: HDD V6
- Capacity: 11.9 l
- Power max: 350 kW
- Torque max: 2300 Nm

Learnings

- TDG's tend to encounter issues that in the past would have been discussed in Investigation Groups. Thus, future developments should include an investigation stage in the project.
- Biodiesel adds new aspects to engine testing.

Ongoing Test Developments

- T-091 (Torque Converter Clutches W280 and W260)
- L-100 Turbo Charger Deposit Test
- T-102 (Start Clutches)

Potential Future Test Developments

- FZG PTX C/10/90-Pitting Test ?
- New gasoline sludge test replacing the M111 ?
- New test to examine the effect of biodiesel on engine lubricants

Test Monitoring

- CEC is currently developing a new website for the test monitoring system which has the potential to be fully integrated into the CEC website
- Test monitoring provides a “life” tool to evaluate the severity of laboratory tests
- Test monitoring also provides “proof” of severity drifts in test methods enabling industry associations to respond quickly

CEC Web-based Test Monitoring

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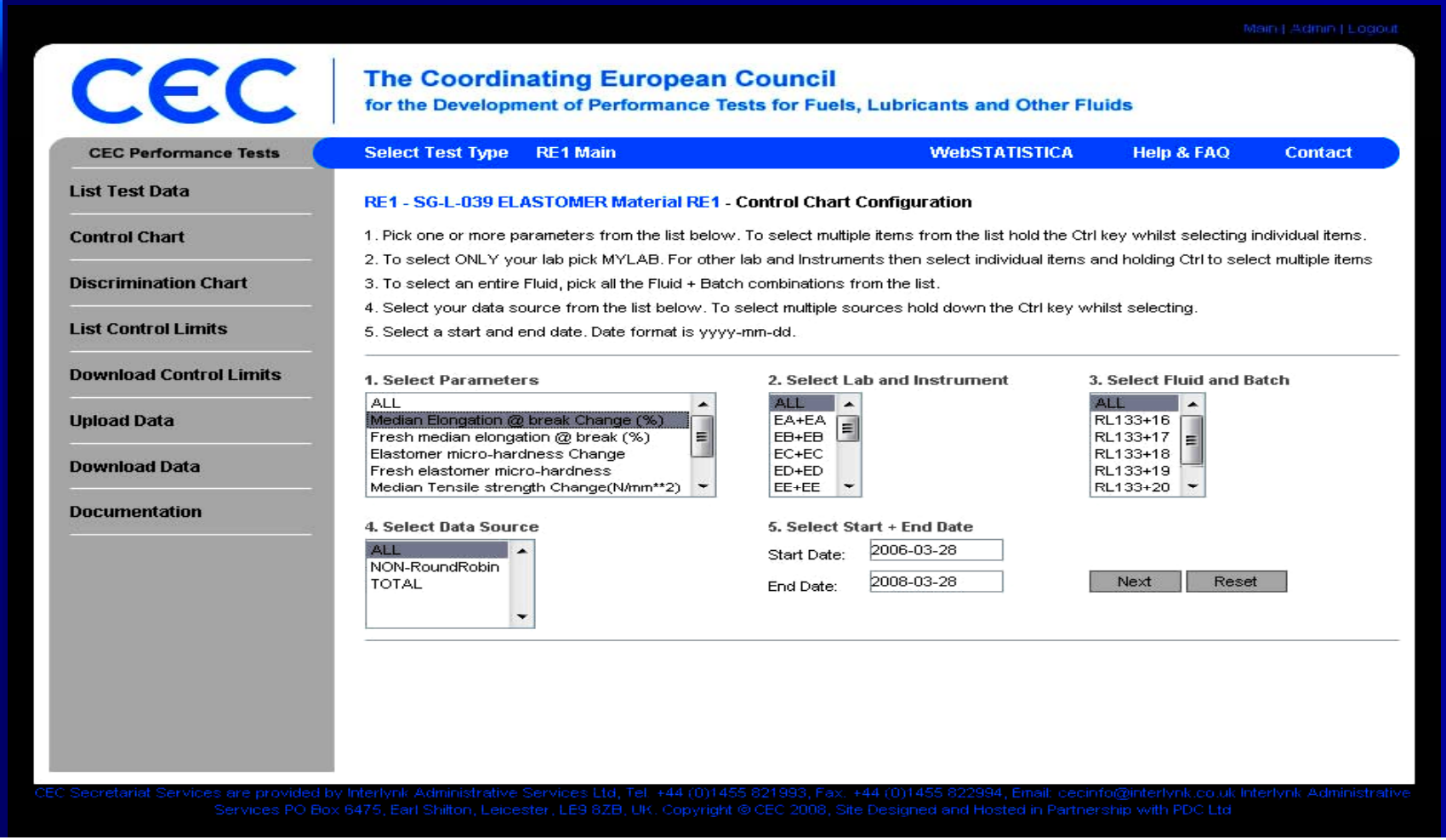
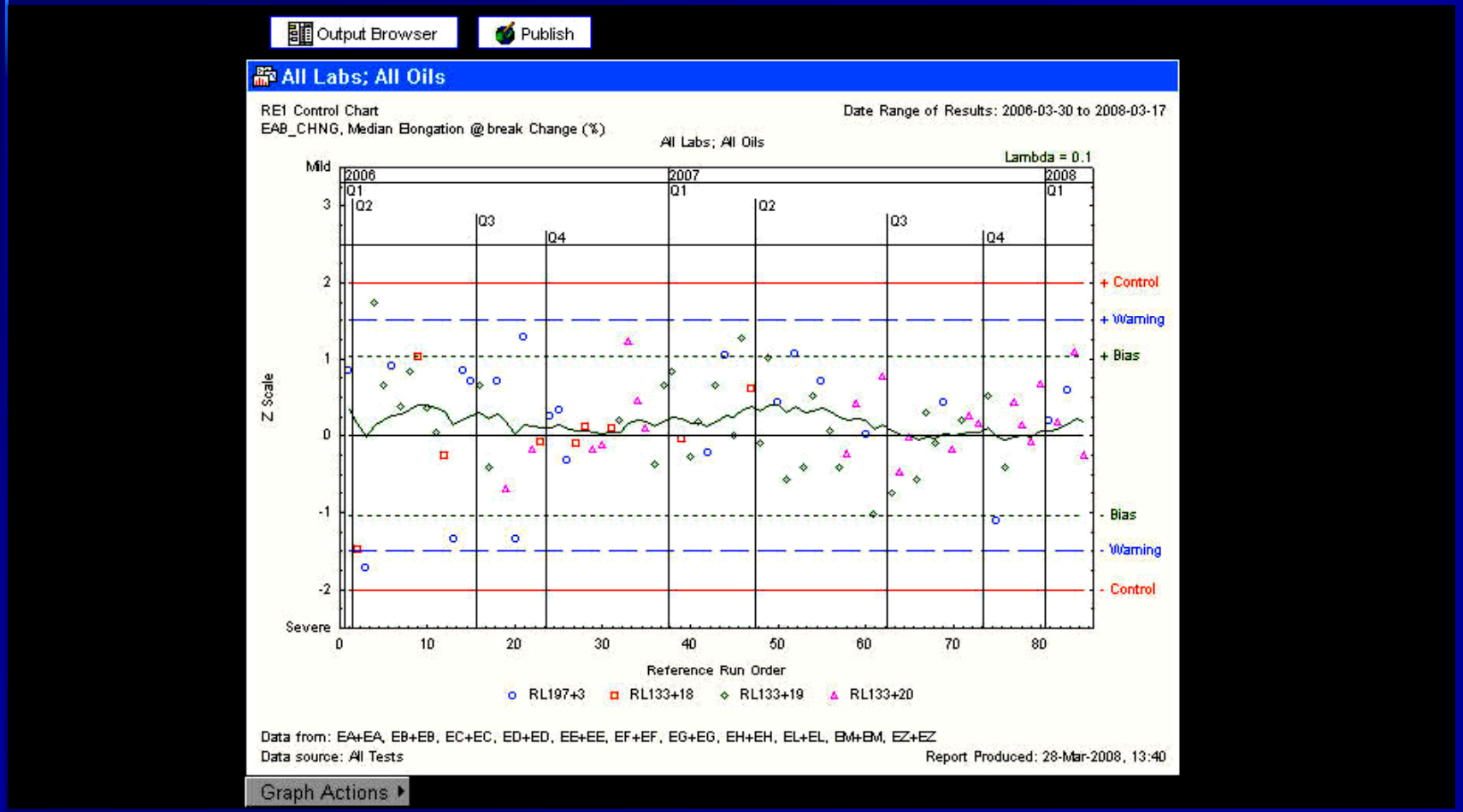
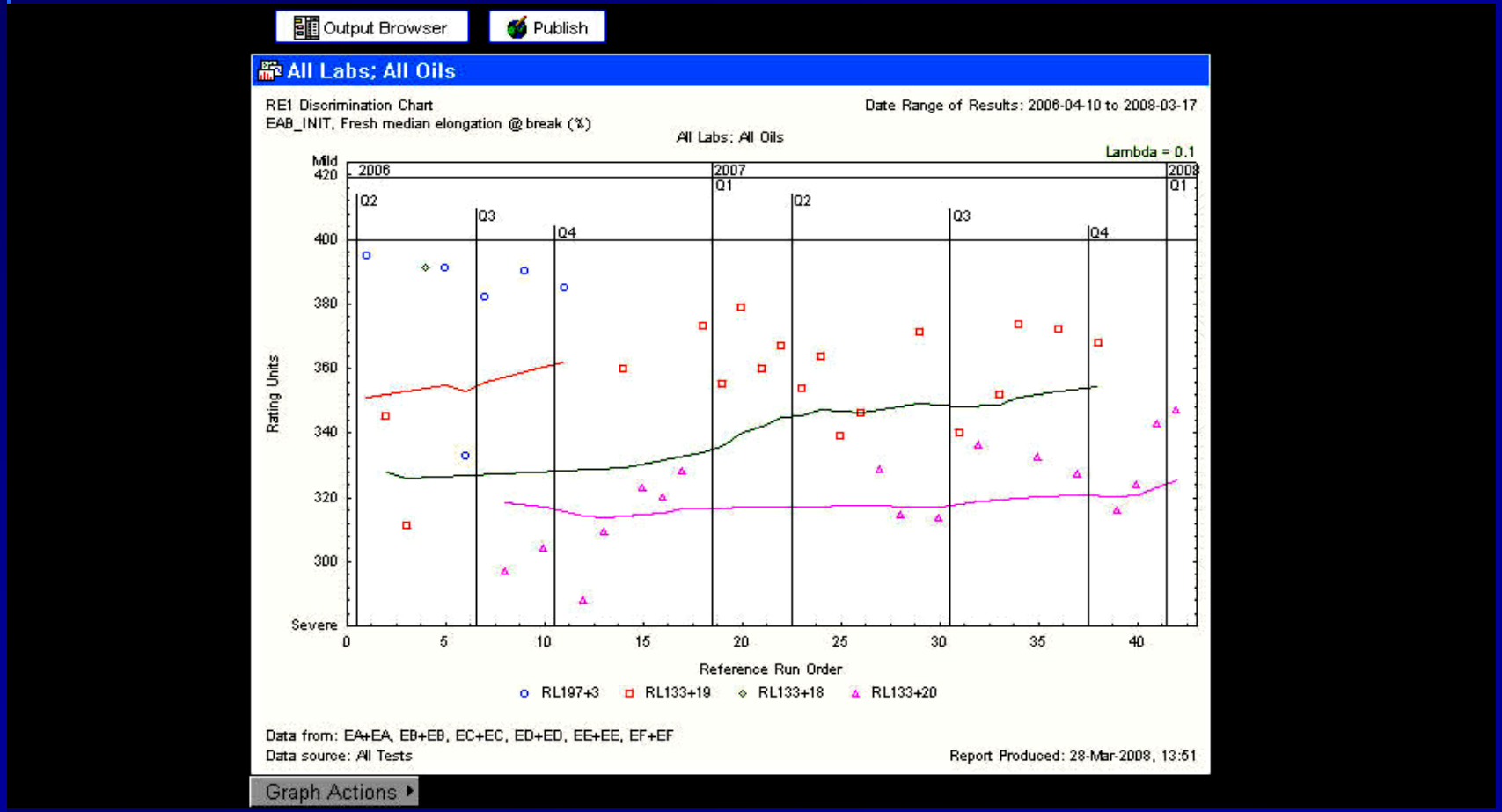


CEC Web-based Test Monitoring



CEC Web-based Test Monitoring



On behalf of the CEC Management Board

I thank the organizers to allow me to show this presentation to you.