

# EELQMS and monitoring of engine lubricant quality in the market



SAE POWERTRAINS, FUELS & LUBRICANTS CONFERENCE

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# Speaker introduction



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- **Coordinator, Technology Dept.**
- **Member of the ATIEL Board of Directors**
- **15-year career in the Lubricants Industry**

# ATIEL

The technical association of the European lubricants industry

- Non for-profit association under Belgian law (Association Sans But Lucratif-ASBL).

Represents the common interests of European lubricant manufacturing and marketing companies

- Membership open to companies actively engaged in the marketing and/or manufacture of lubricants in Europe.
- Promotes dialogue between its members and associated industries on technical issues, regulations, specifications and Codes of Practice.

# ATIEL active Members (as of QIII 2022)



## ACEA - OEMs

- ACEA (European Automobile Manufacturers Association) represents the interests of major European car, truck and bus manufacturers.
- Sets performance specifications for engine lubricants through its European Oil Sequences.
- ACEA performance specifications increasingly adopted outside Europe.



# ACEA European Oil Sequences

- ACEA European Oil Sequences cover light duty passenger cars & heavy duty trucks.
- The ACEA Oil Sequences are updated regularly to address:
  - **Changes in European legislation**
  - **Changes in engine technology**
  - **Changes in fuel composition**



# ACEA European Oil Sequences for PCMO

- The current issue of the Oil Sequences is for Light-duty engines ACEA 2021, released 1 May 2021
- After 1 May 2023, all ACEA claims for PCMO have had to be to the 2021 Sequences and the 2016 and all other previous ACEA Sequences will be obsolete.

acea

2021, Revision 1 (May 2022)

ACEA Oil Sequences  
Light-duty engines





# ACEA European Oil Sequences for HDDO

- The current issue of the Oil Sequences is for Heavy-duty engines ACEA 2022, released 1 May 2022
- After 1 May 2024, all ACEA claims for HDDO have had to be to the 2022 Sequences and the 2016 and all other previous ACEA Sequences will be obsolete.

acea

May 2022

ACEA Oil Sequences  
Heavy-duty engines

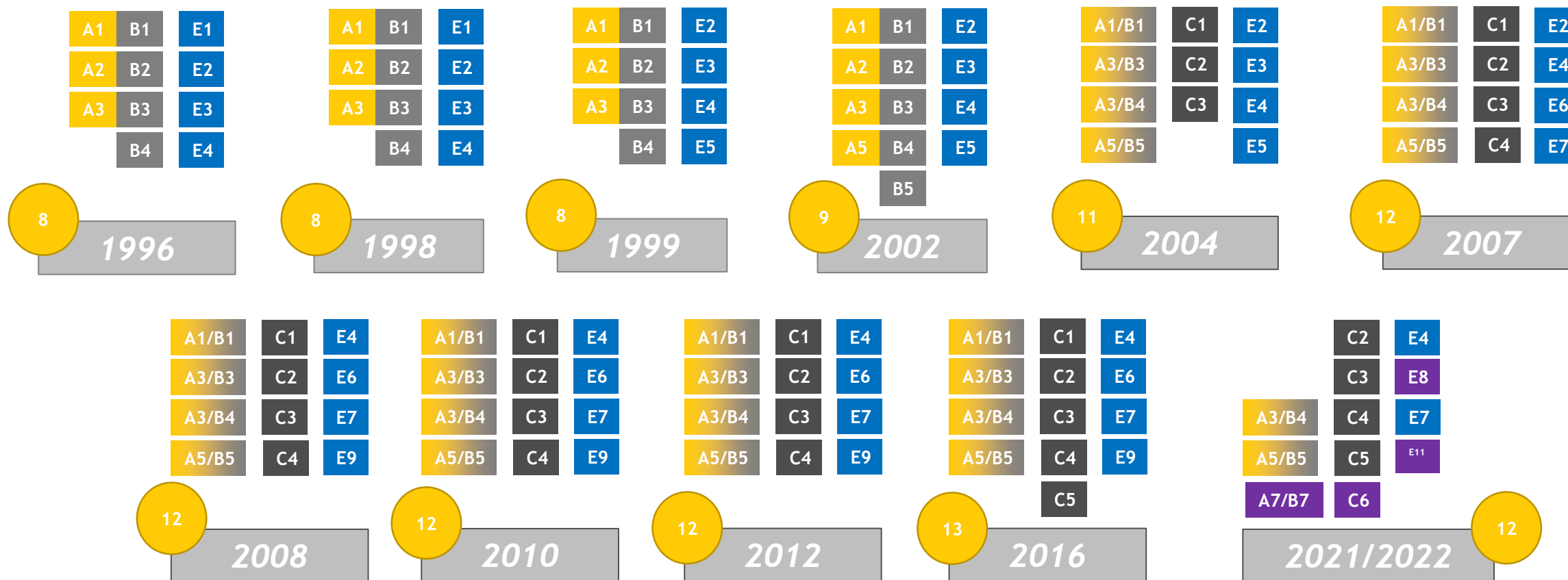




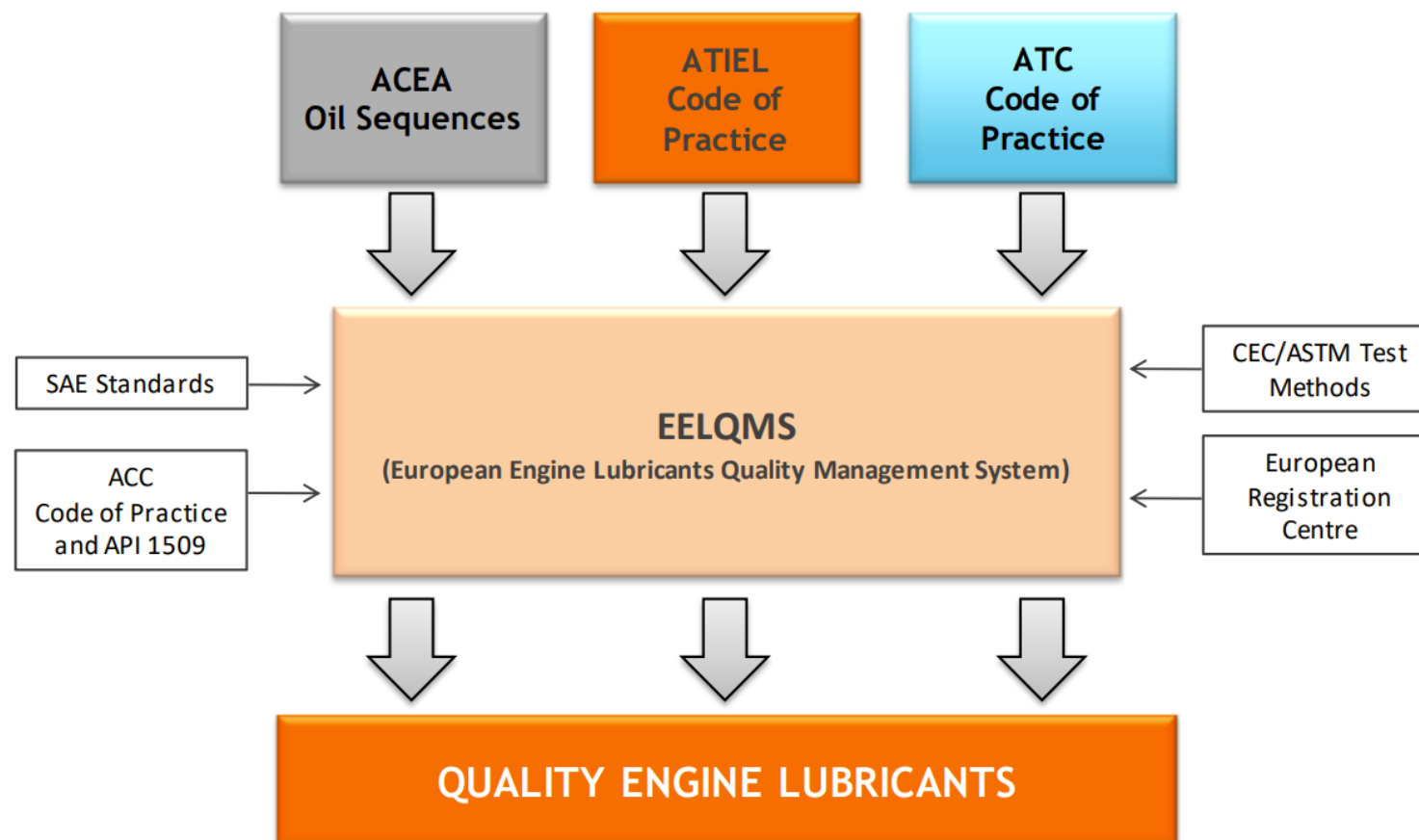
# ACEA performance claims

- All lubricant marketers are responsible for all aspects of product liability when making ACEA claims!
- Lubricant marketers claiming ACEA performance can include claims for specific engine categories on their product labelling.
- For these claims to be valid ACEA requires these engine lubricants to be developed in accordance with the European Engine Lubricant Quality Management System (EELQMS).

# The Complexity of ACEA performance claims



# About the EELQMS



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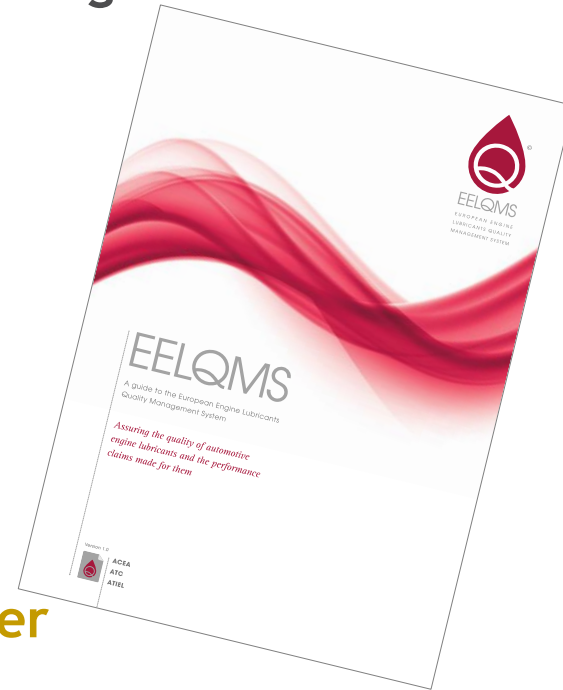
- Voluntary quality management system for automotive engine lubricants - but ACEA requires marketers making claims to comply with EELQMS.
- The ONLY system that can be used to qualify engine lubricants against ACEA Oil Sequences.
- Developed by industry stakeholders to promote development of improved, fit-for-purpose engine lubricants that meet increasing technical requirements.
- Designed to assist lubricant marketers in assuring the quality of their lubricants and performance claims made for them in the marketplace.
- The ATIEL Code of Practice is a key element of the EELQMS.
- Visit: [www.eelqms.eu](http://www.eelqms.eu)



# Summary of EELQMS guidelines

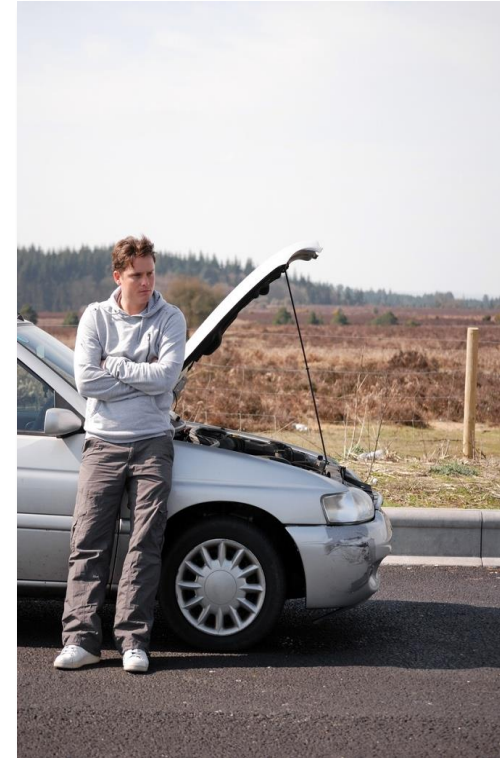
Lubricant marketers developing engine lubricants in compliance with ACEA Oil Sequences shall carry out formulation development, blending and marketing in accordance with the guidelines in the ATIEL Code of Practice :

- Incorporating EELQMS guidelines in a quality management system (eg ISO 9001, or ISO TS 16949)
- Ensuring an independent audit of the lubricant development process.
- Having Code of Practice checklists signed off by an authorized company representative.
- Blending products according to requirements of ATIEL Code of Practice, including accreditation to an auditable QMS.
- Signing a Marketers' Letter of Conformance and submitting the Letter and quality certificates to the EELQMS administrators, SAIL.



# Why quality is important

- Vehicle OEMs need to know that appropriate quality engine lubricants will be available in all their markets.
- Trade/workshops need assurance that inadequate lubricant performance will not lead to warranty claims.
- Consumers need confidence in the quality of the products being used in their vehicles.



# ATIEL Code of Practice

- Been in existence since 1996.
- Provides guidelines to help formulators and marketers in the development of lubricants that meet ACEA performance requirements.
- Has evolved in line with ACEA Oil Sequences





# Code of Practice - contribution to quality

- The existence of the ATIEL Code of Practice has contributed to:
  - Higher quality lubricants in the market
  - More precise engine & lab tests
  - Clearer formulation guidelines
  - Development of a robust lubricant quality management system



# Marketing

Compliance with the EELQMS includes signing a Lubricant Marketers' Letter of Conformance:

- Required for ACEA performance claims
- Confirms compliance with EELQMS
- Renewed every year
- Membership of ATIEL is not required to be a signatory



# ATIEL Compliance Policy

- Launched to support LoC signatory marketers who make valid ACEA performance claims.
- Encourages greater compliance across the industry through:
  - continuous monitoring of lubricant quality in the market
  - exchange of information and technical data that supports education of lubricant marketers.
- Provides framework for supporting marketers in taking corrective action to address non-compliance issues.
- Sets out procedures for ATIEL to give feedback and advice to marketers, or to take action against them, depending on the severity of non-compliance.
- Available on the ATIEL website: [www.atiel.org/code-of-practice/compliance-policy](http://www.atiel.org/code-of-practice/compliance-policy).



# Execution delegated to SAIL

- SAIL is an independent subsidiary to ATIEL, contracted to provide administrative, financial and management services in support of ATIEL's product compliance and Letter of Conformance activities.
- Administers LoC submissions and approves company registrations;
- Manages product surveys on behalf of ATIEL
- Interacts with all stakeholders and protects confidentiality of survey process
- Licences use of EELQMS trademark and logo
- Collects registration fees
- Detailed information available on the SAIL website:
  - [www.sail-europe.eu](http://www.sail-europe.eu)



**SAIL**

# Products/brands registration and compliance

- Register with SAIL and submit a signed Marketers' Letter of Conformance
- Template letter available on SAIL website: [www.sail-europe.eu](http://www.sail-europe.eu)
- Quality of products claiming compliance are checked regularly through SAIL's product survey programme, covering all LoC signatories
- Pay annual registration fee (€975/year)



# Products/brands registration and compliance

- Letter of Conformance scheme participants are licensed to use the EELQMS logo on their packaging, demonstrating that their lubricant meets the minimum standards of ACEA European vehicle manufacturers



EELQMS

EUROPEAN ENGINE  
LUBRICANTS QUALITY  
MANAGEMENT SYSTEM

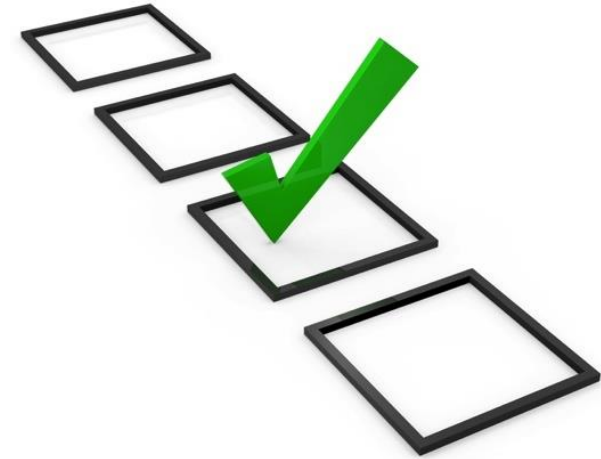
## EELQMS/LoC industry impact

- ACEA lubricants have a truly global reach with four hundred and fifty participants in sixty-four countries across six continents
- ACEA is a full and active participant in the process, having co-signed over 50 letters sent to lubricant marketers in 2021/22
- Many OEM's check for an applicant's Letter of Conformance registration status as part of their approval process



## ATIEL quality surveys

- Enhance the overall robustness of quality management.
- One of the most effective ways to measure levels of compliance with EELQMS.
- Has become an ongoing activity and a core part of ATIEL's Quality Management Committee's initiatives.
- Conducted and administered on behalf of ATIEL by SAIL.



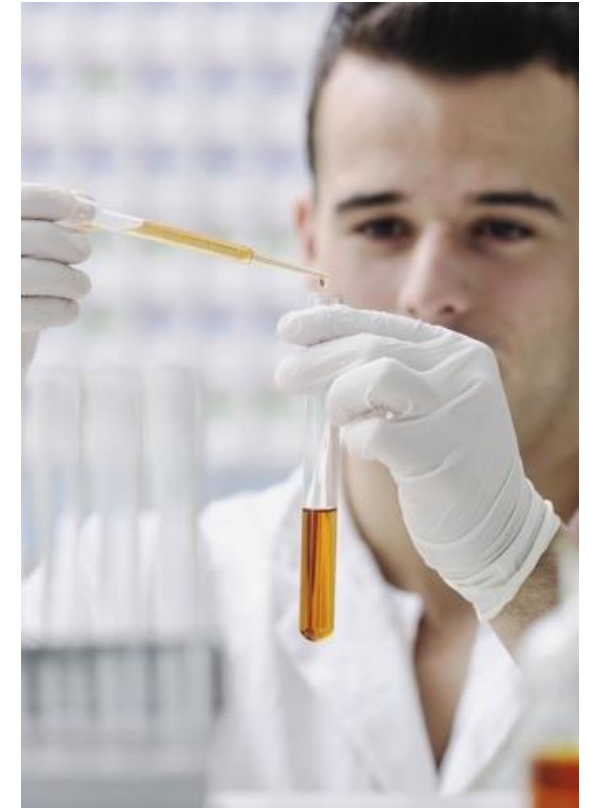
# Purpose of quality surveys

- Establish a base line for compliance with quality standards in Europe.
- Replicate to some extent best practice from other markets (eg API programme in North America).
- Test validity of anecdotal evidence of inaccurate performance claims of some lubricants on the market.
- Demonstrate the benefits of full adoption and application of the EELQMS.
- Enhance the overall robustness of quality management.



# Quality survey methodology

- All samples sourced independently, coded and ‘blind’ tested.
- Tested against most appropriate ACEA European Oil Sequences and parameters including:
  - Viscosity (high and low temp)
  - Noack volatility
  - SAPS (Sulphated Ash, Phosphorous & Sulphur)
  - TBN (Total Base Number)
- Testing and statistical analysis conducted by independent expert laboratory.
- Individual results shared only with respective marketer.
- Appropriate follow-up actions and sanctions in case of serious breaches of compliance.



## 2021 quality survey

- In 2021, ATIEL/SAIL sponsored over 4000 individual tests as part of the Lubricant Marketers' Letter of Conformance compliance program
  - Most failures due to incompatible combined claims e.g. A3/B4, C3.
    - Sulphated ash and TBN will fail for one of the specs.
  - Other failures included TBN, Sulphated ash, NOACK, HTHS, Phosphorus, MRV and CCS.
- General findings from the quality surveys aimed at preventing failures cases in the future are communicated to all stakeholders and general public via newsletter prepared by QMS Committee. That newsletter could be downloaded from knowledge centre of ATIEL website.

# EELQMS -Summary of stakeholder benefits

## OEMs

- Controlled and consistent quality of engine lubricants
- Wide availability of lubricants meeting ACEA requirements
- Protection against warranty claims



## End user

- Trouble-free operation
- Confidence in lubricant performance claims
- Wide availability of lubricants of appropriate quality



## Lubricant and additive industry

- Timely, cost-effective engine lubricant development
- Common approach & standards (level playing field)
- Formulation optimisation and controlled flexibility

