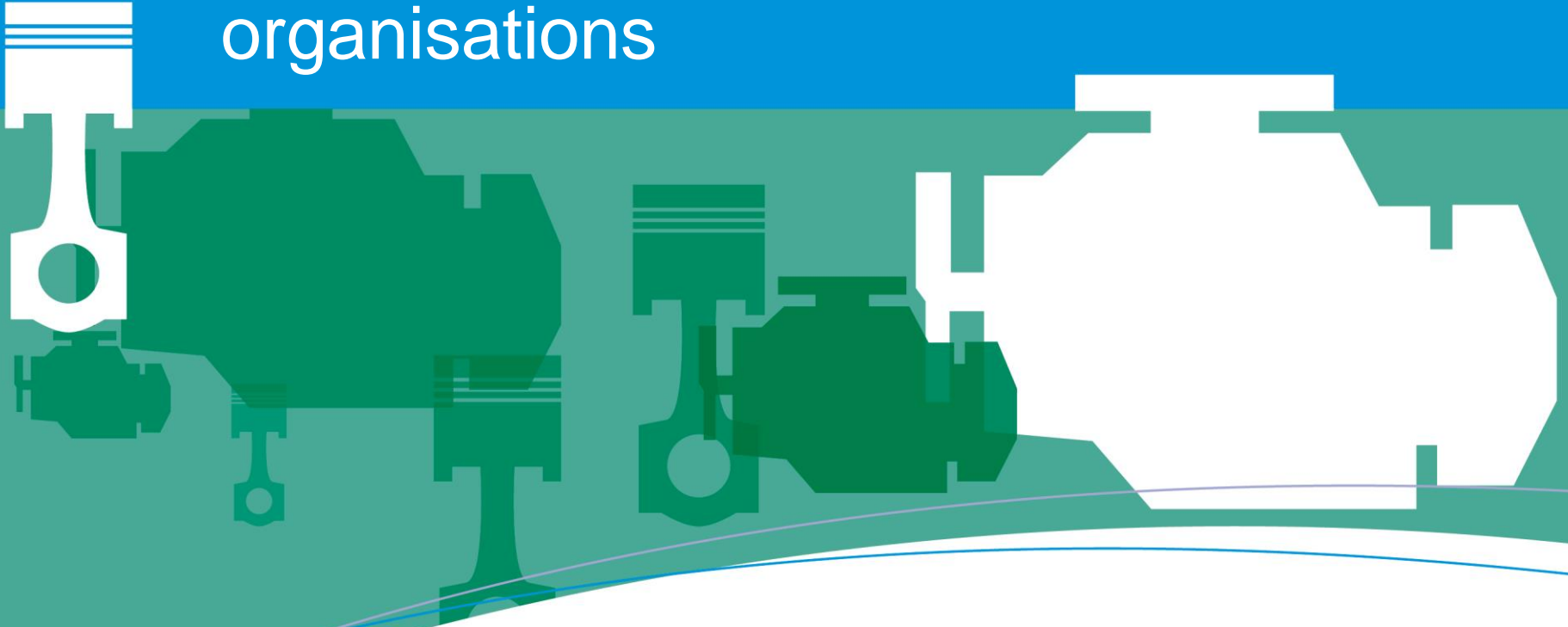


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# The lubricants industry and its organisations



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# The lubricants industry

- Many organisations are involved in the lubricants industry worldwide
- Additive companies, oil companies, OEMs, testing laboratories
- Each industry group and each individual company has their own business priorities
  - Industry Groups aim to find best solutions, but are not always in agreement

## Additive companies

- Provide formulations tested to consistent standards designed to ensure lubricants will protect engines
- Minimise engine testing complexity and proliferation of specifications
- Offer value added products to the industry
- Offer solutions to meet new hardware performance requirements

## Oil companies

- Consist of Lubricant Oil Marketers and Baseoil Suppliers
- Lubricant Oil Marketers offer thoroughly tested, high quality, differentiated lubricants to the market meeting OEM needs
- Baseoil suppliers offer the base oil component which when enhanced with additives provide formulations to lubricate engines

## OEMs (Original Equipment Manufacturers)

- Seek suitable lubricants for protection of their vehicles
- Offer higher value/higher performance products to end users that comply with the more and more stringent environmental requirements.

## Test laboratories

- Help develop and maintain high quality engine and bench tests to the lubes industry



# Additive company associations

- Europe

- ATC



- North America

- ACC



# ATC - Technical Committee of Petroleum Additive Manufacturers in Europe

- Formed in 1974, ATC comprises Infineum and our competitors as well as component suppliers
- Membership is open to any additive company which manufactures petroleum additives, or has comprehensive test facilities, in Europe
- Covers lubricant additives (crankcase, transmission, industrial) as well as fuel additives
- Provides a forum for technical and regulatory developments
  - Major focus on health and safety of chemicals and associated legislation
- Issues a code of practice for engine oil development
  - Code covers test laboratory requirements, test registration, formulation modifications and reporting of data
  - Focus on CEC tests
- Interacts with ATIEL and ACEA to aid the definition of lubricant specifications

Website [www.atc-europe.org](http://www.atc-europe.org)



# ACC - American Chemistry Council

- Formerly CMA – Chemical Manufacturers Association
- Represents the whole US chemical industry
- Health & Safety, Environmental
  - Product approval protocols
- One division in ACC is the Petroleum Additives Panel (PAP) which itself consists of 3 task groups
  - Fuel Additives Task Group (FATG)
  - Health, Environmental and Regulatory Task Group (HERTG)
  - Product Approval Protocol Task Group (PAPTG)
- Consists of major additive companies active in lube oil development
- Since 1992 has issued a Product Approval Code of Practice for engine oil development
  - Code covers test laboratory requirements, test registration, formulation modifications and reporting of data
  - Focus on ASTM tests
- Website [www.americanchemistry.com](http://www.americanchemistry.com)



# Oil marketer Industry Associations

- Europe

- ATIEL



- North America

- API



# ATIEL (Association Technique de l'Industrie Européenne des Lubrifiants )

- Represents the European and international lubricants industry
  - Includes companies with headquarters outside Europe which market lubricants in Europe
- Member companies discuss technical issues relating to the lubricants industry in Europe
  - Product quality and specifications
  - Health Safety and the Environment
- Issues a code of practice for lubricant marketers covering engine oils designed to meet ACEA Sequences
  - Base Oil Interchange, Viscosity Grade Read Across and Viscosity Modifier Interchange guidelines are followed
- ATIEL code is used in conjunction with ATC and ACC codes of practice as part of EELQMS (European Engine Lubricant Quality Monitoring System)
- Lube marketers making claims against ACEA Oil Sequences are required by ACEA to submit a letter of conformance to EELQMS

Website [www.atiel.org](http://www.atiel.org)



# API – American Petroleum Institute

- Represents all aspects of America’s oil and natural gas industry
  - Producers, refiners, suppliers, pipeline operators, marine transporters aswell as service & supply companies
- Lubricants Group reports to the Downstream Lubricants Committee and is compromised of base stock producers, lubricant marketers, additive companies and additive component suppliers with material interests in North America.
- Issues and monitors an Engine Oil Licensing and Certification System (EOLCS) for passenger car and heavy duty diesel engine lubricants
  - Similar to the ATIEL code this includes guidelines for Base Oil Interchange and Viscosity Grade Read Across
- Issues API ‘S’, ‘C’ and now ‘F’ category specifications
- Issues product licenses (“Donut” and “starburst”) and operates an audit program to check compliance of licensed oils





# Engine builders

- Groupings
  - ACEA (European Automobile Manufacturers Association)
    - European manufactures of passenger cars and heavy duty vehicles
  - EMA (Engine and Truck manufacturers association)
    - North American heavy duty manufacturers
  - AAM (Alliance of automobile manufacturers)
    - North American light duty manufacturers
  - JAMA (Japan automobile manufacturers association)
    - Japanese vehicle manufacturers
    - Includes motorcycles
  - ILSAC (International lubricants standardisation and advisory committee)
    - International group comprising AAM, EMA, JAMA
- Individual Builders (OEMs)



# ACEA (European Automobile Manufacturers' Association)

- Replaced the previous organisation in Europe (CCMC)
- Includes Light Duty and Heavy Duty Engine Manufacturers, open to OEMs who manufacture in Europe
- Includes all major European OEMs, including some with parents outside Europe
  - e.g. Ford, Toyota
- First issued lubricant sequences in 1996 covering Gasoline, Light Duty and Heavy Duty Diesel lubricants
- No direct quality monitoring, logos or approvals but require oils that make claims against ACEA Oil Sequences to be developed using EELQMS (European Engine Lubricant Quality Monitoring System)
  - Linked to ATC, ATIEL, ACC and API Codes of Practice

Website: [www.acea.be](http://www.acea.be)



# EMA - Engine & Truck Manufacturers Association

- Trade organisation of mainly US Heavy Duty Diesel OEMs including: Volvo/Mack, Caterpillar, Cummins, Detroit Diesel, GM Powertrain, Navistar, John Deere, PacCar, Ford
- Participates in industry discussions on performance categories for HDD lubricants, fuels and after treatment fluids
- In conjunction with API and ACC, develop specifications for HDD lubricants

Website: [www.engine-manufacturers.org](http://www.engine-manufacturers.org)



# AAM - Alliance of Automobile Manufacturers

- Trade association of 12 of US Car and Light Duty Diesel OEMs including : BMW, Fiat Chrysler, Ford, GM, JLR, Mazda, MB, Mitsubishi, Porsche, Toyota, VW and Volvo Cars
- Leading advocacy group promoting sustainability mobility with focus on the environment, energy and motor vehicle safety
- AAM and JAMA are the light duty vehicle manufacturers that are part of ILSAC. EMA is also a constituent of ILSAC.

Website: <http://www.autoalliance.org/>

# JAMA – Japan Automobile Manufacturers Association

- Trade Organisation of Passenger Car, Heavy Duty OEMs and Motorcycles
- OEM's recommend API, ACEA or JASO quality when their genuine oils is not available
- Outside Japan OEMs recommend API or ACEA quality
- Work through JASO (Japan Automobile Standards Organisation) to develop lubricant specifications



Website: [www.jama-english.jp](http://www.jama-english.jp)



# ILSAC - International Lubricant Standardisation and Advisory Committee

- Includes AAM and JAMA members
  - EMA also members but not active in ILSAC specification development
  - ACEA invited but has not joined this group
- Develops lubricant specifications through collaboration with other industry organisations including API and ASTM
- Lubricant requirements are based on API categories with fuel economy requirements (GF-3, GF-4, GF-5 etc.)
- Through API Engine Oil Licensing and Certification System EOLCS, ILSAC qualified oils can be licensed with the API “Starburst”



# Test development and testing organisations

- Europe
  - CEC – Co-ordinating European Council for the Development of Performance Tests for Fuels, Lubricants and other Fluids
  - IP – Institute of Petroleum
    - Develops oil analysis test methods
  - GFC – Groupement Française de Coordination
    - Develops bench tests, mainly for the French oil and motor industry
- North America
  - ASTM International (formerly known as American Society for Testing and Materials)
    - Develops engine and analytical tests

# Test development and testing organisations

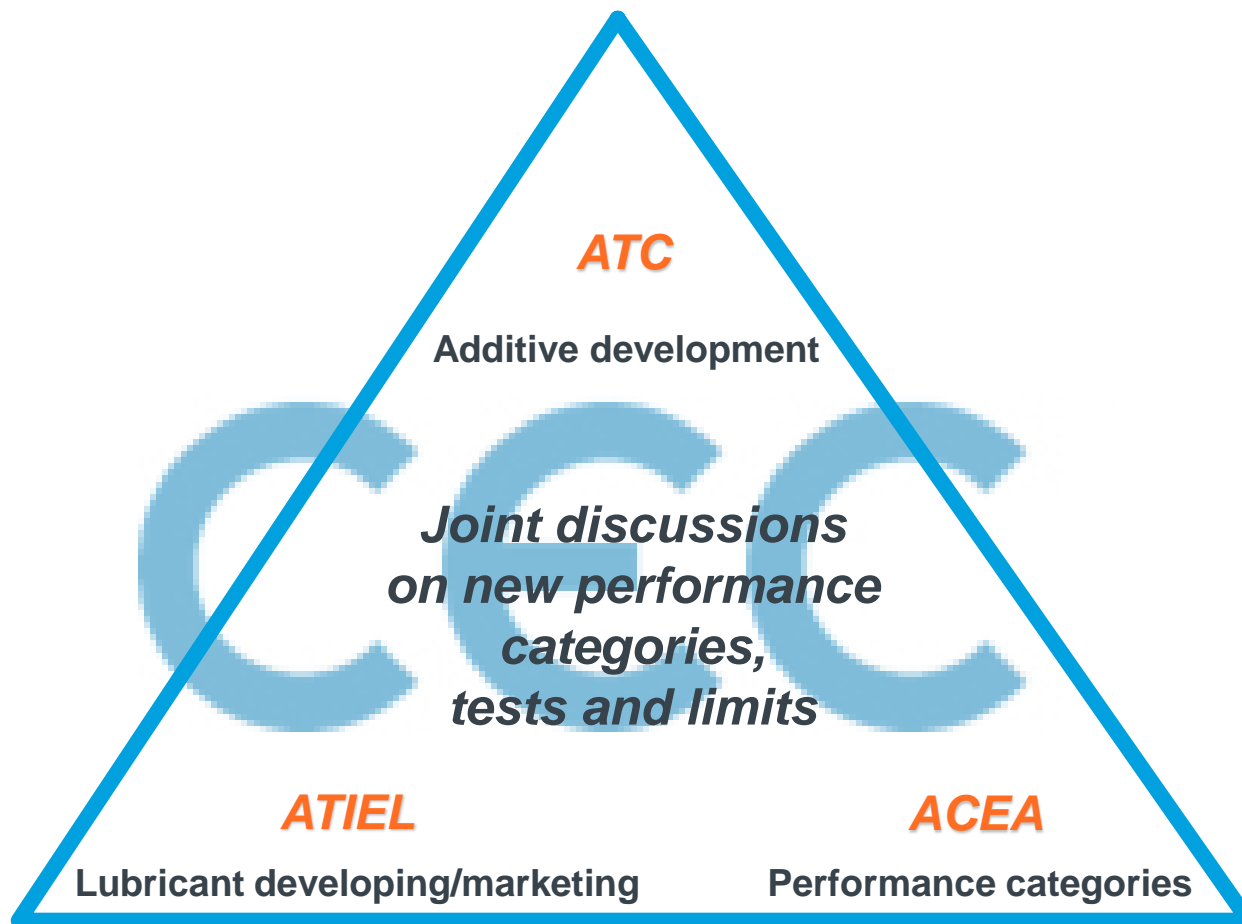
- ISO – International Standards Organisation
  - Has national affiliates e.g. BSI (UK), DIN (Germany), AFNOR (France), SIS (Sweden)
  - Develops test methods
- Japan
  - JASO (Japan Automobile Standards Organisation)
    - Develops Japanese tests with support from JAMA and industry partners
  - JPI (Japan Petroleum Organisation)
    - Performance bench tests and analytical tests



# CEC

- Develops test methods for performance testing of transportation fuels, lubricants and other fluids
- CEC test methods are used extensively in Europe and widely throughout the world
- CEC board comprises representatives from industry stakeholders (ACEA, ATIEL, ATC, Concawe)
- Project groups formed by representatives from individual oil companies, OEM's, test laboratories, additive companies.
  - Test Development Groups
  - Surveillance Groups
- Unlike the ASTM (NA), CEC covers only test methods and not classifications

# The European AAA



# Summary: who does what?

	<b>Europe</b>	<b>NA</b>
<b>Engine/Bench testing rules (additive companies)</b>	<b>ATC</b>	<b>ACC</b>
<b>Base stock and VGRA guidelines (oil companies in EU, oil and additive companies in NA)</b>	<b>ATIEL</b>	<b>API</b>
<b>Engine builder (OEM) interests</b>	<b>ACEA</b>	<b>EMA, ILSAC</b>
<b>Specifications</b>	<b>ACEA, OEMs</b>	<b>API, ILSAC, OEMs</b>
<b>Oil Licences</b>	<b>OEMs</b>	<b>API, OEMs</b>
<b>Oil Approvals</b>	<b>OEMs</b>	<b>OEMs</b>



# Organisations that classify engine oil performance

- **National bodies/International Associations/Industry Groupings**
  - API (American Petroleum Institute)
  - JASO (Japanese Automotive Standards Organisation)
  - ILSAC (International Lubricant Standardization and Approval Committee)
  - ACEA (European OEMs)
- **Original Equipment Manufacturers**
  - Mercedes-Benz
  - Volkswagen-Audi
  - BMW
  - Porsche
  - MAN
  - Volvo
  - MTU
  - Scania
  - GM
  - *and others*

# OEM approvals

- OEM's issue approval (or acknowledgement) for branded oils upon submission of the appropriate documents in various combinations according to OEMs, can include for example:
  - Cover letter
  - Application Form
  - Confirmation/No-objection letter
  - IR Trace
  - Oil sample
- OEMs moving to online approval systems
  - e.g. MB approval is now on-line only via their “BEAM” system.
- Each OEM has their own system

# OEM approvals - definitions

- **Original Approval**

The first time an oil is presented for approval at the OEM

May be submitted by add co. requesting Trading Approval, or an oil marketer

- **Trading Approval “Handelsfreigabe”**

Approval of a specific *oil code* requested by add co. which then gets ‘Reblended’

- **Package Approval**

Approval of an additive package allowing flexible use in a range of base oils and VI Improvers without further engine testing

Only certain HDD OEM’s apply this and is restricted to particular specifications and viscosity grades



# OEM approvals - definitions

- **Reblend Approval**

An oil holding Trading Approval gets re-blended at another location by oil marketers under different brand names

- **Rebrand Approval**

An oil holding Original Approval or Reblend Approval is sold under a different Brand Name (blended at the same location)

- **Confirmation/No Objection Letter**

Written permission from the owner of a Trading Approval that a third party may re-blend their oil formulation. Required by MB and BMW



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