

Safeguarding the quality of European automotive engine lubricants

The role of the European Engine Lubricant Quality Management System (EELQMS) and the ATIEL Code of Practice.



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Speaker introduction



- **Peter Tjan**

- President of ATIEL since 2011
- 25-year career in the oil industry
- Experience in refining, lubricants marketing and sales

What we will cover

- ATIEL's role in the lubricants industry.
- Outline of the European Engine Lubricant Quality Management System (EELQMS) and the ATIEL Code of Practice.
- How EELQMS and the ATIEL Code of Practice help marketers of engine lubricants claiming to meet European OEM quality requirements support these performance claims.
- How the ATIEL Code of Practice supports a cost-effective approach to lubricant development while giving reassurance to OEMs and end-users of the quality and consistency of lubricants making performance claims.
- Description of the quality survey work that ATIEL is undertaking to assess compliance among products actually in the marketplace.

About ATIEL

“ATIEL is a representative body for manufacturers and marketers in the European lubricants industry. ATIEL, in cooperation with other industry stakeholders, seeks to enhance the reputation of the lubricants industry by providing expert advice to regulators, industry partners and end-consumers, and by promoting superior standards of technology and lubricants performance.”*



ATIEL members



20 member companies - European and global representation

ATIEL: key activities (1)

For its members -

- ATIEL provides a forum for debate on topical non-competitive industry issues and a platform for sharing resources and expertise.
- Through the work of its technical committees and working groups ATIEL:
 - monitors current and future technical trends and regulatory programmes
 - facilitates the development of scientifically sound responses to changes in market needs
 - promotes European quality standards and best practices around the world
 - carries out quality surveys to assess levels of quality compliance in the marketplace

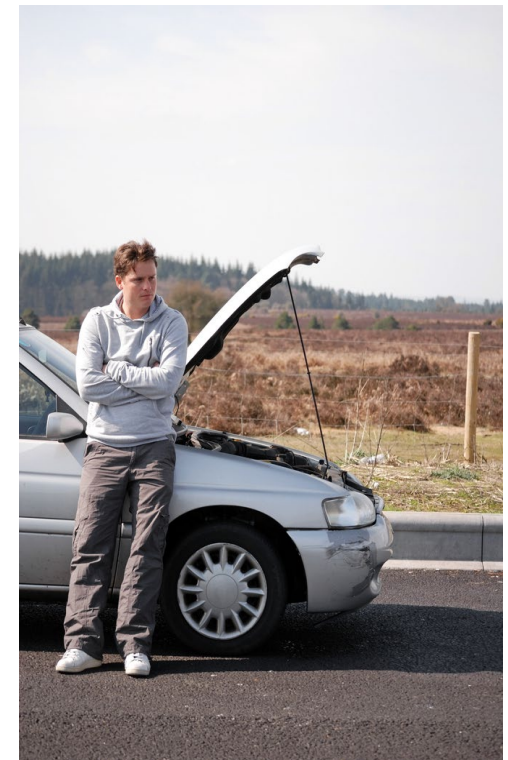
ATIEL: key activities (2)

For regulators, industry partners and end-consumers

- ATIEL contributes to the development of best practices and standards that promote superior quality products in the marketplace.
- Through the collective expertise of its members ATIEL:
 - Sets clear and consistent guidelines and best practices that address the needs of vehicle manufacturers and consumers.
 - Acts as a focal point for technical issues relating to the performance and environmental demands of engine oils.
 - Acts as a respected partner and advisor on lubricants matters to all external stakeholders.

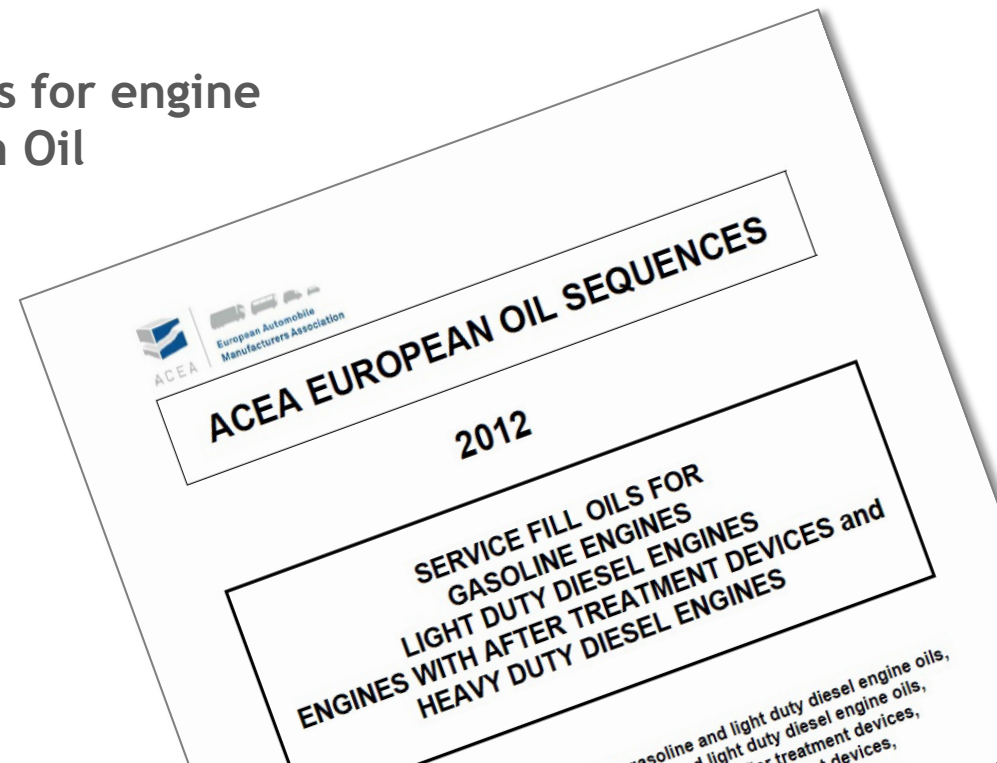
Why quality is important

- 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.



OEMs - ACEA

- ACEA (European Automobile Manufacturers Association) represents the interests of 15 major European car, truck and bus manufacturers.
- Sets performance specifications for engine lubricants through its European Oil Sequences.



Role of quality standards

- Example of an engine lubricant with an ACEA performance claim (ACEA A5/B5).
- The ACEA European Oil Sequences are quality standards for engine lubricants used in light duty passenger cars & heavy duty trucks.
- The ACEA Oil Sequences are updated regularly to address:
 - **Changes in legislation**
 - **Changes in engine technology**
 - **Changes in fuel composition**



ACEA performance claims

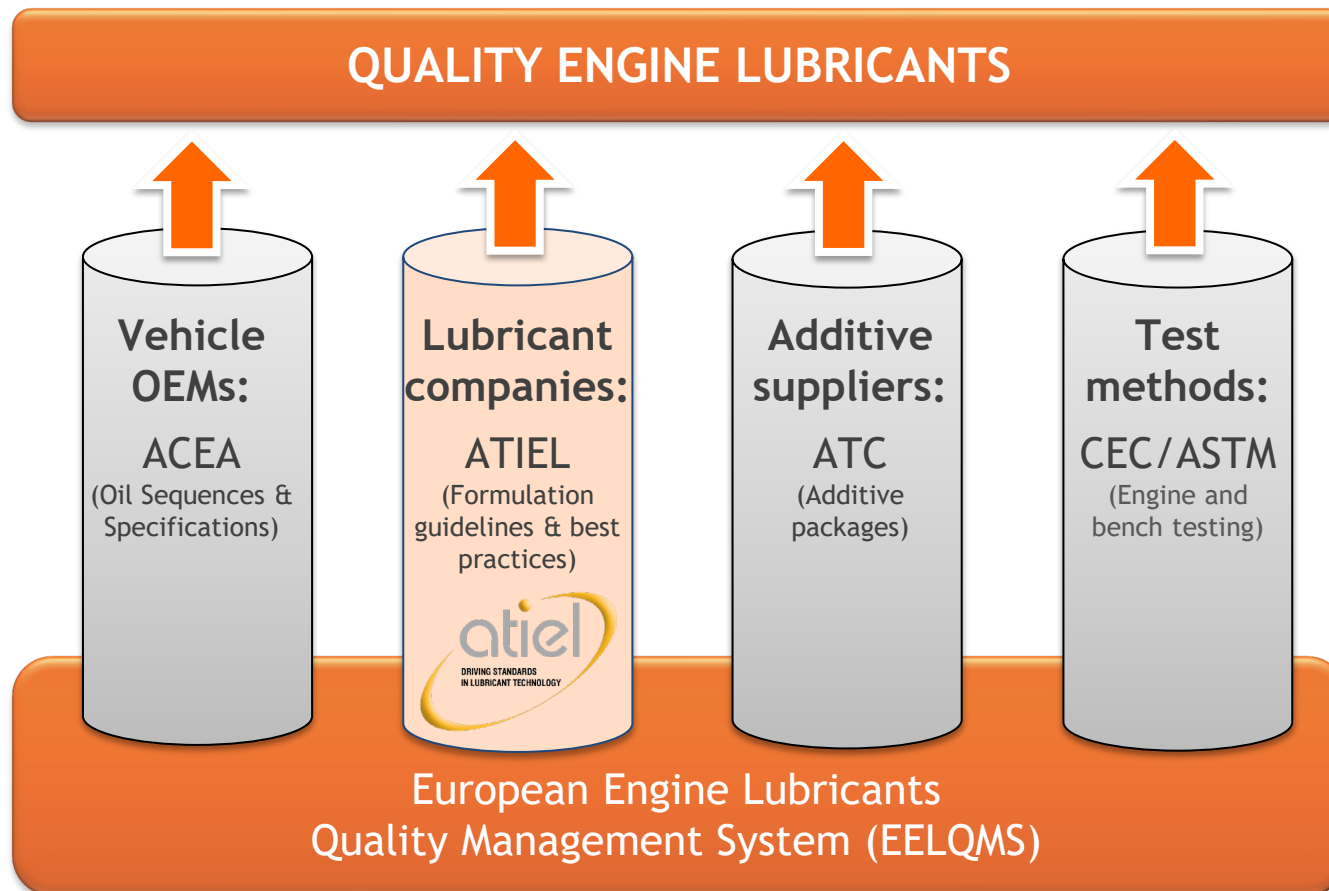
- Lubricant marketers are responsible for all aspects of product liability!
- Lubricant marketers claiming ACEA performance can include claims for specific engine categories on their product labelling.
- For these claims to be valid ACEA requires these engine lubricants to be developed in accordance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



About the EELQMS

- The European Engine Lubricant Quality Management System (EELQMS) is a voluntary quality management system for automotive engine lubricants.
- Developed out of a shared interest amongst industry stakeholders for a quality management system to assist in the development of improved, fit-for-purpose engine lubricants that meet the increasing technical requirements of the automotive industry.
- Designed to assist lubricant marketers in assuring the quality of their lubricants and the performance claims being made for them in the marketplace.

EELQMS stakeholders



EELQMS contribution to quality

- EELQMS provides a detailed process and structure for lubricant development, production and performance validation.
- Provides assurance of the quality of engine lubricants on the market that claim to meet the performance requirements of ACEA.
- It is a voluntary system but the **ONLY** system that can be used to qualify engine lubricants against ACEA Oil Sequences.
- The ATIEL Code of Practice is a key element of the EELQMS.



The ATIEL Code of Practice

- Has provided guidelines to help formulators and marketers in the development of lubricants that meet ACEA performance requirements since 1996.
- Has evolved in line with ACEA Oil Sequences and is currently on Issue 19.



Code of Practice - contribution to quality

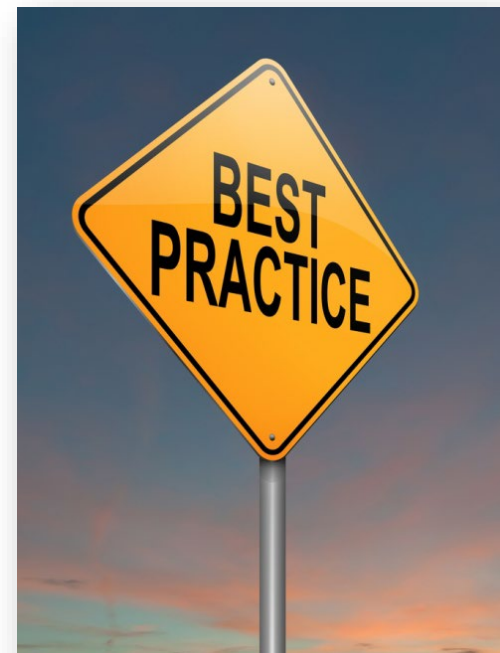
- Since 1996 the existence of the ATIEL Code of Practice has contributed to:
 - Higher quality lubricants in the market
 - More precise engine & lab tests
 - Clearer formulation guidelines
 - Development of a lubricant quality management system



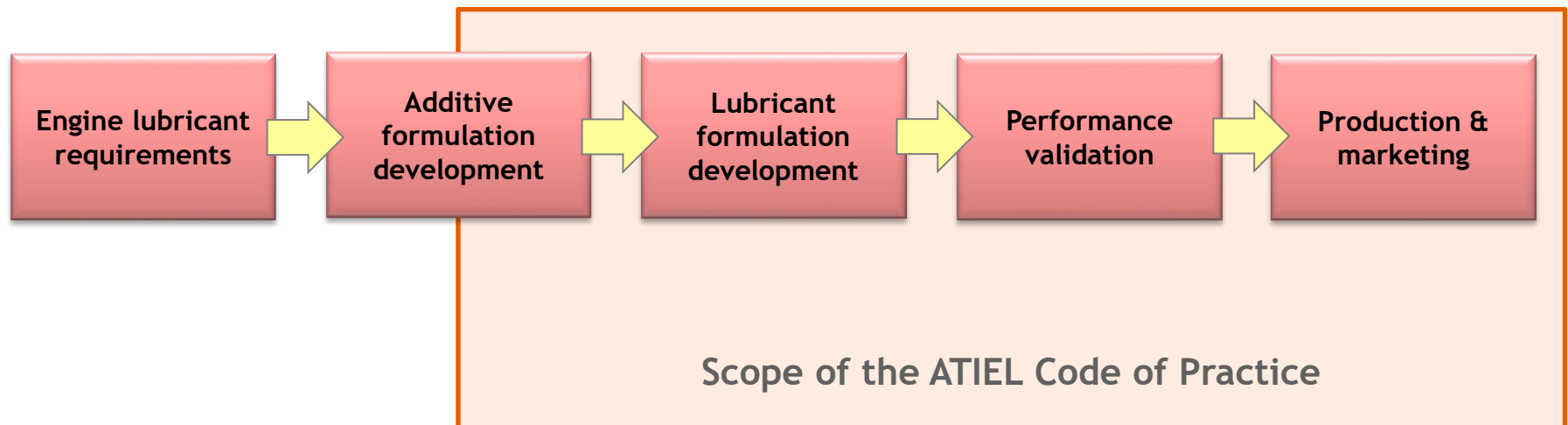
ATIEL Code of Practice

Provides guidelines that:

- Enable lubricant companies to comply with the requirements of the ACEA Oil Sequences.
- Represent accepted industry best practices.
- Offer a common approach and standards for the whole industry to follow.
- Give reassurance to OEMs and end-users of the quality and consistency of Lubricants making ACEA performance claims.



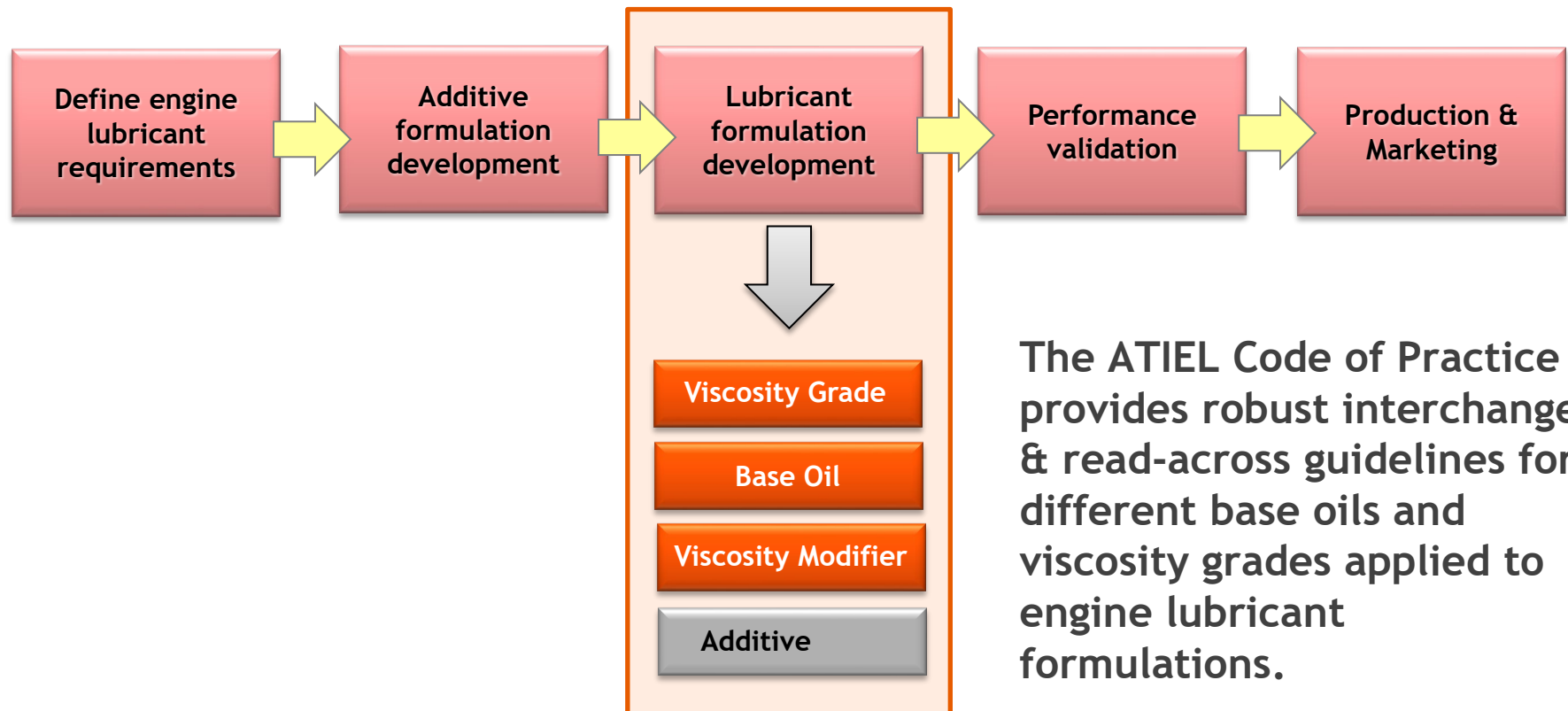
How the ATIEL Code of Practice applies to the lubricant development process?



ATIEL Code of Practice - how does it help?

- Facilitates efficient lubricant development by:
 - providing a documented, structured approach
 - eliminating unnecessary or duplicate testing
 - reducing product development time
 - making more effective use of resources
- Provides guidelines for base oil interchange, viscosity grade read-across and viscosity modifier interchange.
- Provides standard guidelines and auditable quality management systems to ensure consistent quality of lubricants.
- Ensures availability of appropriate lubricants worldwide (different base oils, viscosity grades) through controlled formulation flexibility.

Engine lubricant development programme



Why we need interchange guidelines

The purpose of interchange guidelines is to maintain the integrity and quality of lubricants while allowing formulators and marketers to:

- accommodate variations in base oils
- optimise their formulations
- develop variations in formulations (eg viscosity grades) for different markets, performance criteria, engine types etc.

Lubricant formulation development

Viscosity Grade Read-Across (VGRA) guidelines allow development of tailored viscosity formulations for:

- different climate zones
- fuel economy
- different engine types

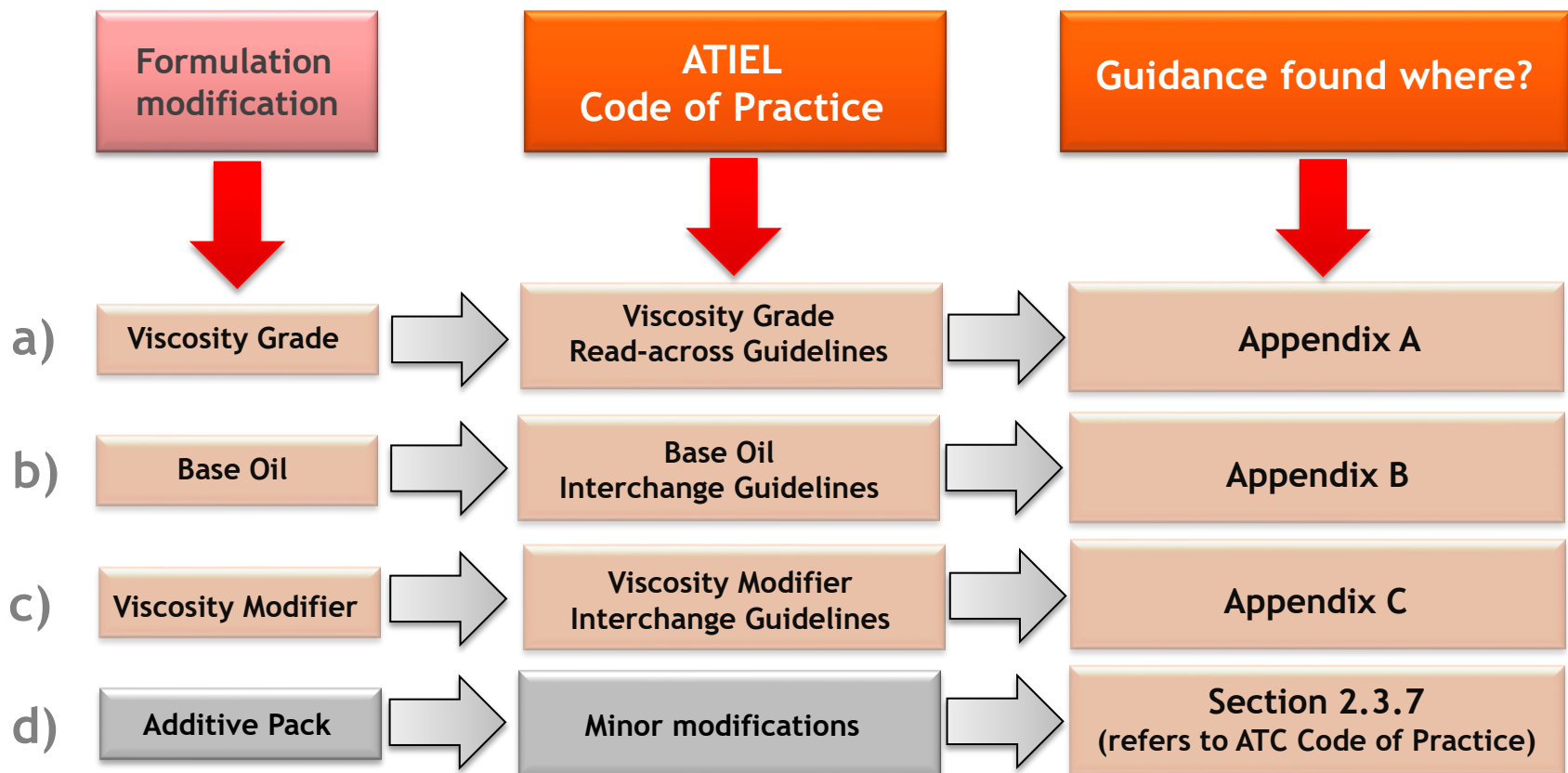
Base Oil Interchange (BOI) guidelines allow:

- Formulators to accommodate variations in availability of base stocks
- Optimisation of lubricant formulations

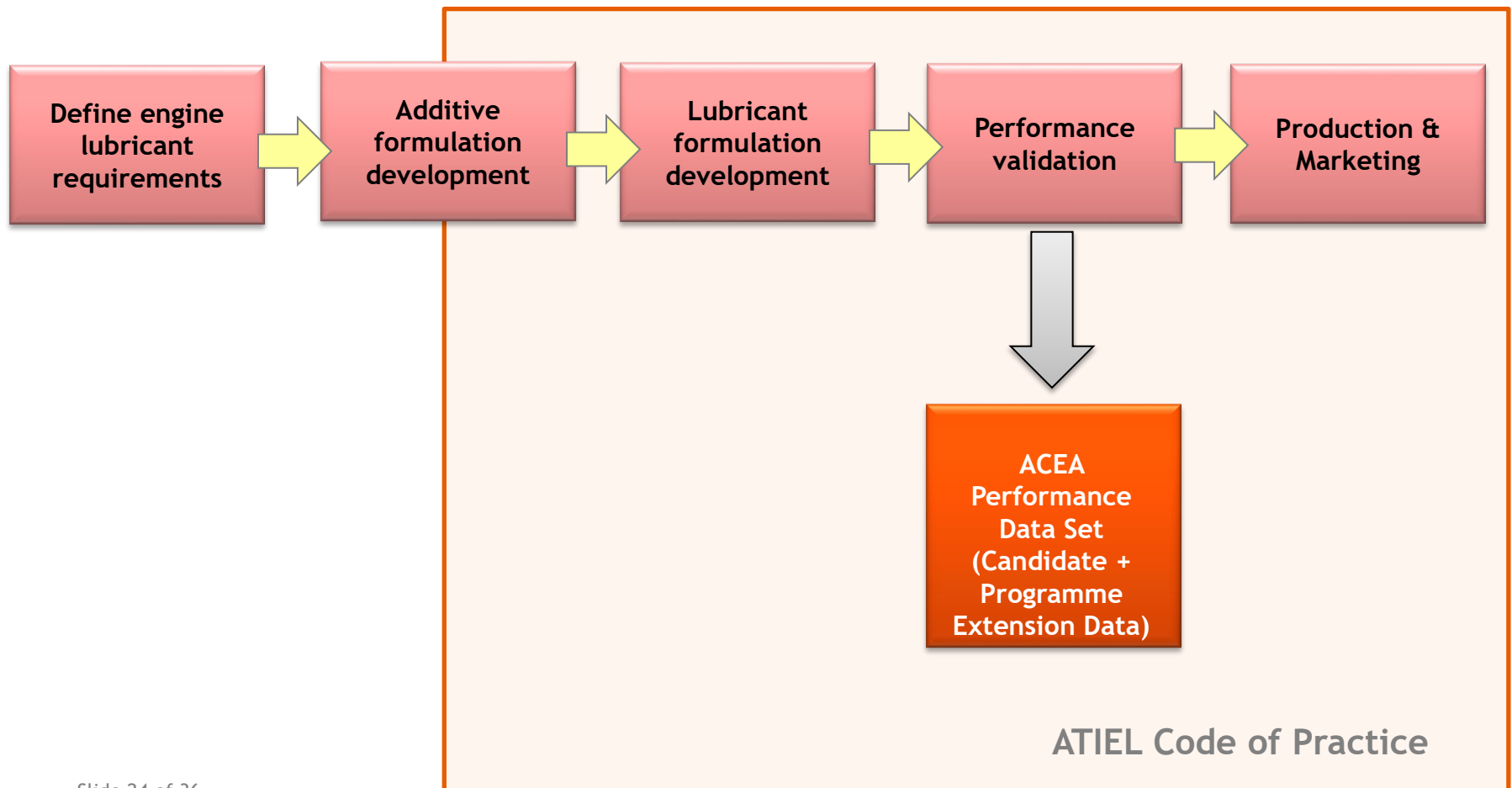
Viscosity Modifier Interchange (VMI) guidelines allow for:

- Variations in availability of different viscosity modifiers
- Formulation optimisation
- Product performance enhancement

How to use the Code of Practice



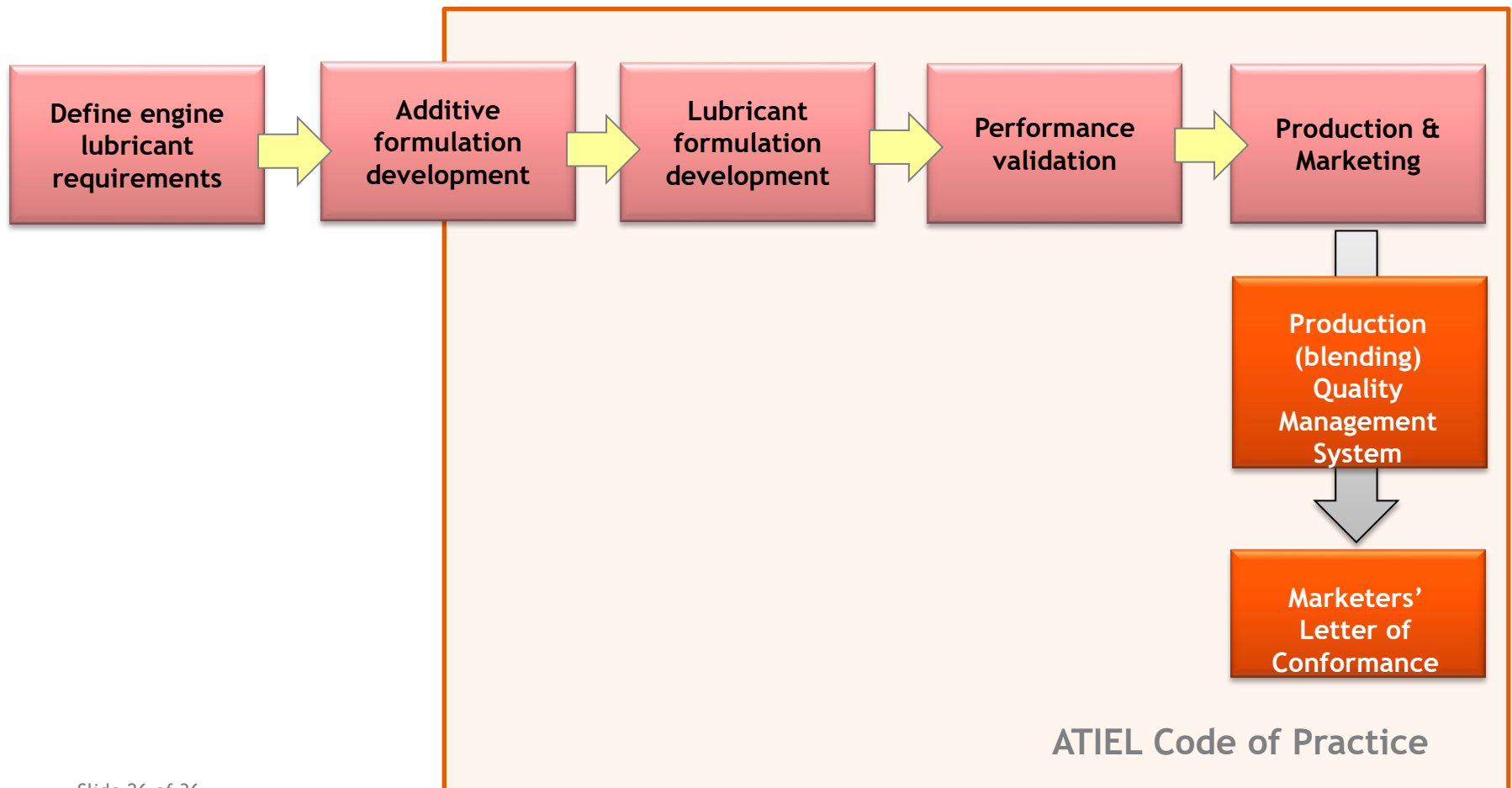
Performance validation



Performance data set

- The Performance Data Set captures and documents the whole lubricant development process including:
 - **formulation properties**
 - **formulation modifications**
 - **relevant engine and laboratory test results**
- In developing a Performance Data Set, guidelines in the ATIEL Code of Practice (ie to accommodate changes in viscosity grade, viscosity modifier & base oils) may have to be applied.

Engine lubricant development programme



Marketing

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

Required for ACEA performance claims

Confirms compliance with EELQMS

Signed Letters held by ATIEL

List of signatories on ATIEL website

Renewed every two years

Membership of ATIEL is not required to be a signatory

Letter of Conformance template available from ATIEL website: www.atiel.org



Summary of stakeholder benefits

OEMs

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



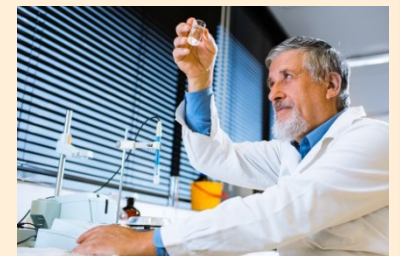
End user

- 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



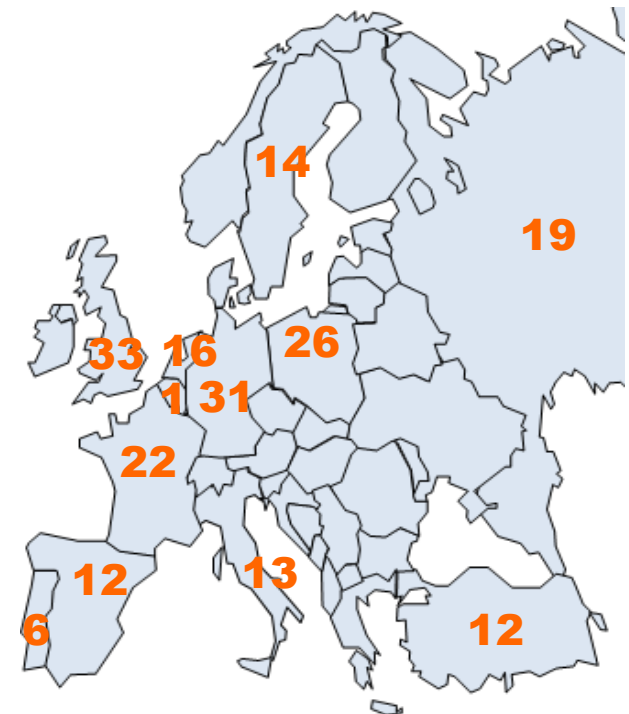
ATIEL Quality Survey

- In July 2013 ATIEL conducted its first engine lubricants quality survey...



Independent quality survey

- Paid for by ATIEL members but conducted by independent body.
- Over 200 engine lubricant samples from ATIEL members purchased from outlets across Europe.
- All ATIEL members represented in the sample.
- Covered a range of common viscosity grades and quality levels.



Purpose of the quality survey?

- To establish a base line for compliance with quality standards in Europe.
- To 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.
- To visibly demonstrate the benefits of full adoption and application of the EELQMS.
- To enhance the overall robustness of quality management system activity.



Quality survey methodology

- All samples sourced completely independently, coded and 'blind' tested.
- Tested against most appropriate standards - ACEA European Oil Sequences 2008.
- Testing covered key performance 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.



Quality survey results

- Not a totally scientific study but a way to 'test the water' and gain learnings.
- Overall level of compliance encouraging but some issues raised.
- No serious quality issues identified.
- No baseline or established methodology
- will develop over time as more data is gathered.
- Individual results shared only with respective marketer and appropriate follow-up actions taken.



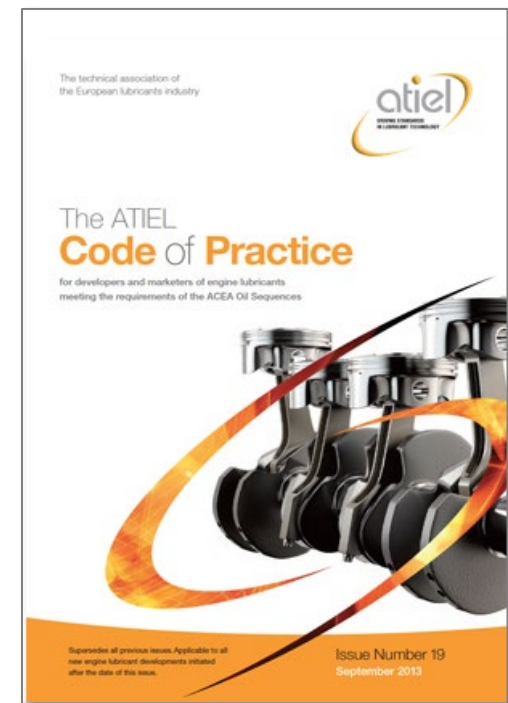
Quality surveys: ongoing activity

- Surveys are one of the most effective ways to demonstrate compliance.
- Quality survey will become a regular ATIEL activity.
- Second survey will be conducted before end of 2014 covering broader range of products.
- Second survey will be extended to cover Letter of Conformance signatories (ie beyond ATIEL membership).
- Initial surveys will provide basis for future annual surveys.



Conclusion

- The EELQMS and ATIEL's Code of Practice benefit all stakeholders:
 - OEMs ✓
 - Lubricant companies ✓
 - Additive companies ✓
 - Workshops ✓
 - Consumers ✓
 - Base oil suppliers ✓



Thank you!

For more information and to download a copy of our
Code of Practice visit: www.atiel.org

Contact us at: info@atiel.eu

ACEA Oil Sequences v Code of Practice

The ATIEL Code of Practice is updated regularly and in line with each evolution of the ACEA Oil Sequences.

| ACEA Oil Sequence issue | ATIEL Code of Practice issue |
|-------------------------|------------------------------|
| 2008 | Issue 16 |
| 2010 | Issue 17 |
| 2012 | Issue 19 |

*Issue 18 was an editorial update with no change to technical requirements.

ACEA members

BMW Group

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