Mastering
EU telecoms regulation

MODULE 1
Introduction to the EU regulatory framework

MODULE 2
Market analysis & ex ante regulation

MODULE 3
Consumer protection & end-user rights

MODULE 4
Spectrum management and 5G

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INTERNATIONAL

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training

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The CPD Certification
Service

regulation made simple

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The training will provide attendees with:

- A comprehensive overview of regulatory issues and developments in the telecommunications sector, using real-life examples and case studies from the European Union;

- An insight into the latest developments in the fields of broadband deployment and access regulation, interconnection and call termination, radio spectrum policy and awards, net neutrality, mobile regulation and roaming, current EU policy goals, the review of the EU regulatory framework for electronic communications and consumer protection;

- An understanding of the key institutional mechanisms, notably the EU legislative process as it relates to the telecoms sector and the harmonisation mechanisms used in Europe, e.g. for market reviews and spectrum policy;

- A historical perspective on European telecoms regulation for participants to gain a clear appreciation of the key regulatory trends.

" *Cullen International manages to keep the complex topic of Telecoms Regulation as simple and tangible as possible. An extremely good overview! Cullen excels in simplifying without falsifying.* "

Anja Ingenrieth, Deutsche Telekom

Who should attend and why?

The seminar is suitable for:

- Seasoned regulatory experts who have become specialised in a specific regulatory area but who wish to refresh their understanding of the broader range of regulatory issues;

- Regulatory specialists dealing with a specific country who want to become acquainted with broader regulatory developments across Europe;

- Individuals who have recently moved into a regulatory positions and wish to acquire a rapid grasp of the key debates; and

- Regulatory experts who wish to reflect on regulatory trends in industry.

The seminar is not designed for experts who already have a broad range of regulatory experience – please take a look at our specialist seminars.

Furthermore, the programme will meet the needs of those who want to:

- Gain a clear insight into the main issues of the EU telecoms regulatory framework and other relevant EU legislation;

- Understand how these issues affect their own national regulatory environment; and

- Learn and exchange views on emerging questions faced by the communications industry

The training organiser

Cullen International provides regulatory and competition law intelligence in telecoms, media, postal and the digital economy - covering developments across Europe, Americas, the Middle East and North Africa, as well as key trends across the globe.

For over 35 years, we have been providing comprehensive, neutral, unbiased, timely information that is trusted by industry and official institutions alike. We are widely recognised as the leading regulatory intelligence provider in the field.

Our services consist of a unique range of alerts, reports, benchmarks and enquiry services that are complemented by our topical conferences and regulatory training offer.

We are also regularly selected to carry out important research and studies for the European Commissionand other organisations and we are frequently sought out to chair or make presentations at industry events.

COURSE TIMINGS

For future course dates,
please visit our website:

www.cullen-international.com

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Speakers

Veronica Bocarova, *Principal Analyst,*
is responsible for developing Cullen International's regulatory training portfolio. She has been actively engaged in capacity building initiatives for policymakers and regulators across a wide range of European countries. She also worked extensively on expanding Cullen International's service coverage into the CEE countries and led the European Commission's monitoring of telecom markets in the EU enlargement countries from 2008 to 2014.

Philippe Defraigne, *Director,*
has worked extensively on EU regulation affecting the telecoms and internet sectors and the implementation at national level across Europe. He is widely regarded in the industry as one of the leading experts in the field.

Stefano De Luca, *Senior Analyst,*
follows telecoms and digital regulation in Italy with a particular focus on connected cars. Before joining Cullen International in 2016, Stefano worked as an associate in an international law firm and at the European Commission's think tank on various topics related to the EU telecoms framework review and the digital economy.

Peter Dunn, *Director of European Relations,*
is responsible for developing and maintaining close relations with Cullen International's clients and other contacts in Europe. He regularly presents Cullen International's research in industry conferences and training courses. Before joining Cullen International in 2010, he worked in the UK and continental Europe for Orange and for Colt; and for Digicel Group in the Caribbean.

Teresa Felix, *Analyst,*
follows telecoms regulation in Portugal. She is a legal expert in EU and national telecoms and postal regulation, largely dedicated to consumer issues. Before joining Cullen International, Teresa worked in Portugal at the national regulatory authority for communications (ANACOM) as a legal advisor to the Information and Consumers Department. She has also worked as a legal advisor at the Portuguese Association for Consumer Protection.

Dries Indesteege, *Head of Telecoms,*
leads our research on telecoms regulation in Europe, pulling in contributions from our analysts and correspondents across the continent. Prior to his collaboration with Cullen International, Dries worked at Belgacom / Proximus on local loop unbundling and the company's launch of IPTV.

Laurence Nivot, *Senior Analyst,*
follows telecoms regulation in Belgium, France and Lithuania. Laurence is also lead author of the Consumer Protection Cross-Country Analysis report, covering 12 European countries. Laurence joined Cullen International in 2012, previously working as a journalist for the European Commission's news website.
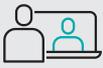
Matej Podbevšek, *Principal Analyst,*
follows telecoms regulation in Latvia, Slovenia and the UK, and is the lead author of the monthly Europe Telecom Update. Before joining Cullen International in 2014, Matej was a senior advisor in the telecommunications department of the Slovenian regulator for communication networks and services (AKOS).

Martin Schraa, *Principal Analyst,*
follows regulation at EU level, covering the European Commission, Parliament, Council and BEREC. He also follows postal and telecoms regulation in the Netherlands. Martin joined Cullen International in 2007 after an internship at the European Telecommunications Network Operator's Association (ETNO).

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MODULE 1
Introduction to the EU regulatory framework

Telecoms technology and networks

An introductory session to explain the main technical terms and concepts of telecommunications technology to participants who have little prior experience in the field.

It provides a sound basis for the more advanced sessions later in the course.

Topics include:

- Data networks and the OSI model
- Fixed and mobile network topologies
- Fibre-to-the-home (FTTH), cable broadband, VDSL and vectoring

Telecommunications regulation and the role of regulators in perspective

An abridged history of telecommunications regulation and reflection on its evolution from the global and EU perspective, addressing:

- History, drivers and trends in regulation
- Ex ante vs ex post regulation
- Infrastructure vs service-based competition
- Evolving role of regulators in response to new technologies, business models and market structures

The EU regulatory framework: policy context, main goals and provisions

Background to the European Electronic Communications Code (EECC), its main provisions and other key elements of the EU regulatory framework:

- Evolution of the EU telecoms regulatory framework and the review process
- Policy context: Gigabit society and 5G goals for 2025, Europe's digital decade
- Infrastructure vs service-based competition
- An overview of key elements of the regulatory framework and ongoing debate:
  EECC, Roaming Regulation, Telecom Single Market Regulation, Broadband Cost Reduction Directive

Governance aspects: NRAs, BEREC and RSPG

The telecoms regulatory framework entrusts the most sensitive regulatory tasks to the national regulatory authorities (NRAs) while aiming to ensure their independence and impartiality. NRAs cooperate at the European level through different organisations such as Body of European regulators for electronic communications (BEREC) and Radio spectrum policy group (RSPG). This session looks at:

- Governance in the context of the telecoms framework
- Set-up of NRAs and rules to ensure their independence
- Status and tasks of BEREC and the BEREC Office
- Role and tasks of RSPG

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MODULE 2
Market analysis and ex ante regulation

Market analysis: market definition, SMP assessment and remedies

An overview of the EU telecoms markets review system, explaining three steps in the market analysis process: market definition (what should be regulated), SMP assessment (who should be regulated) and remedies (how to apply regulation):

- Main concepts of ex ante regulation
- Retail and wholesale markets
- Relevant markets susceptible for ex ante regulation
- SMP assessment based on the European Commission guidelines: single and joint SMP
- Ex ante regulatory obligations that could be imposed on SMP operators and their application in different electronic communications markets

Market analysis: case study

An interactive group exercise, walking through a real-life case study based on a national market analysis example covering the market definition and SMP assessment and discussing the role of indirect constraints and the chain of substitution.

Wholesale access regulation in fixed broadband networks

This session looks into different forms of regulated wholesale access products in fixed broadband networks and regulatory tools available to the NRAs to promote competition and deployment of very high capacity networks (VHCN), covering:

- Access to civil engineering infrastructure
- Local, central and high-quality access
- SMP access regime and symmetric obligations
- EECC provisions to encourage VHCN deployment: wholesale-only networks, pricing flexibility under specific conditions, co-investment and commitments procedure

Geographic aspects of market analysis

Competitive conditions in fixed broadband markets can vary across regions of a country. Cable TV and new FTTx networks are competing with the traditional copper networks. However, these new competing networks usually start their development in more densely populated urban areas and have a limited footprint.

To address these developments, NRAs must apply a more granular approach in the analysis of broadband markets: either by defining geographic sub-markets or by imposing geographically differentiated remedies. The EECC now also requires NRAs to survey the state of broadband networks and investment plans across the national territory, to better reflect geographic specificities in the market analyses process.

This session discusses key methodological considerations applied by NRAs in analysis of broadband markets when dealing with geographically differentiated competitive conditions.

Regulation of fixed and mobile voice call termination

This session explains the principles behind the regulation of fixed and mobile call termination and the evolution of the EU regulatory approach:

- Addressing the natural monopoly for terminating calls
- EC termination rates recommendation
- Symmetry of termination rates
- "pure" bottom-up LRIC cost model: principles, criteria and parameters
- Single EU-wide maximum fixed and mobile termination rates

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MODULE 3

Consumer protection and end-user rights

EU regulatory framework: maximum harmonisation of end user rights

The EECC imposes maximum harmonisation of end user rights at EU-level, preventing member states from applying measures which are either more or less restrictive.

The applicability of end user rights will vary according to the newly defined categories of electronic communications services (ECS), including OTTs: internet access services (IAS), number-based and number-independent interpersonal communications services (NB/NI-ICS) and conveyance of signals (including M2M).

This session includes:

- Horizontal vs sector-specific consumer protection rules in telecom sector, the rationale for sector-specific regulation
- Evolution of the EU regulatory approach
- Maximum harmonisation of end user rights
- Overview of the key EECC provisions and the applicability of end-user rights to specific categories of the ECS.

Universal service: towards affordable broadband

The concept of universal access and universal service has been evolving in recent years, primarily due to the growing take-up of mobile telephony and broadband services. This session explores key aspects of universal access and universal service:

- An introduction to universal access and universal service
- Fundamental requirements of universal service: availability, accessibility, and affordability
- Evolution of the universal service scope under the EU regulatory framework
- Universal service financing mechanisms

Policies on open internet and net neutrality

This session explores the scope of the open internet principle and the net neutrality concept as understood and applied in the EU:

- Concept of net neutrality
- Ecosystem of internet services and the role of OTT/CAPs
- EU net neutrality regulation and BEREC open internet guidelines
- Provisions on reasonable traffic management, specialised services, transparency
- National implementation of the EU net neutrality rules, including decisions on zero rating, traffic management measures and specialised services

EU roaming and intra-EU international calls

The price of international mobile roaming in the EU has been regulated since 2007. In 2015, the TSM Regulation required all retail roaming surcharges to be abolished by June 2017. The retail caps on intra-EU international calls and SMS entered into force on 15 May 2019. This session looks at:

- EU approach to regulating international roaming
- Transparency measures to prevent bill shock
- Impact and practical implementation of the roam like at home measures introduced by the TSM Regulation, including fair use policy and derogations mechanism
- Price caps on international intra-EU communications

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MODULE 4

Spectrum management and 5G

Introduction to mobile spectrum and 5G

This session provides an overview of the key features of 5G, the current phase of mobile telecommunications standards, the main drivers, capabilities and deployment scenarios. Topics include:

- Spectrum for mobile communications: properties and characteristics of different bands
- Evolution from 4G to 5G
- 5G pioneer bands
- Key concepts behind the 5G technology
- 5G use cases and applications
- Enabling technologies: massive MIMO, beamforming, network slicing

Radio spectrum management: institutional and regulatory framework

The EU regulatory framework regards spectrum as a limited public resource. Consequently, it should be administered in a way that provides the most efficient and effective level of use and maximises the long term societal benefits. This session covers:

- Key institutions shaping spectrum policy globally, at the EU and national level
- Spectrum assignment methods: central planning, individual rights of use and licence-exempt use
- Award mechanisms: auctions, beauty contests, first come first served
- Spectrum auctions as the most common award mechanism: economic rationale, policy objectives, format and design
- Competition measures: spectrum caps and reservations
- Licence conditions: duration, coverage and quality of service, network sharing and wholesale access obligations
- Measures to enhance efficient use of spectrum, including secondary trading, leasing, shared spectrum use, spectrum fees and "use it or lose it obligations"

- EECC provisions to ensure more harmonised implementation of the EU spectrum policy, common assignment deadline for 5G pioneer bands and light deployment regime for small cells

Spectrum policy implementation: stimulating investment in 5G

The EU 5G Action Plan sets out for member states key targets and pioneer spectrum bands to enable the provision of 5G services.

This session takes a closer look at the recent and upcoming 5G spectrum awards across the EU member states:

- Spectrum award mechanisms for 5G pioneer bands
- Outcomes of the recent 5G auctions and financial burden on MNOs
- 5G spectrum licence conditions: geographic scope, rollout, coverage and quality of service obligations
- Spectrum for industrial 5G networks, PPDR, etc.

Network sharing and wholesale access in mobile networks

Explanation of wholesale access options in mobile networks including different forms of passive and active network sharing, national roaming and MVNO access:

- Infrastructure vs service-based competition in mobile networks
- Different forms of network sharing and wholesale access
- Legal basis for imposing regulated access to mobile networks and infrastructure sharing, including the new EECC provisionscriteria and parameters
- Overview of recent network and spectrum sharing agreements, specific national policies and regulatory approaches taken by national regulatory and competition authorities
- MVNO access and relevant policy considerations for 5G

For more information

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How to register?

Please register by filling in the respective registration form on our website:
www.cullen-international.com

Fees

Fee (VAT excluded*) per delegate

Early-bird fee (up to one month before the event) .... € 1,800
Standard fee .... € 2,000

10% discount for multiple registrations from the same organisation

Belgian VAT (21%) is chargeable on all bookings.

Upon receiving your registration, we will send you an invoice to be paid within one month and in all cases before the event. Payment can be made by bank transfer or by credit card. In the absence of payment by the due date, Cullen International reserves the right to reallocate places.

Trainings and conferences general terms and conditions

A. Limited number of delegates
To ensure a high quality training/conference experience, the number of participants in the training/conference programme will be limited. Cullen International reserves the right to refuse registrations once the maximum number of participants is reached.

B. Cancellations / substitutions
Cancellations must be made in writing. Full refunds will be paid only if cancellations are received by Cullen International 14 days before the start of the training/conference course.

For trainings, in case of cancellations within 14 days before the start of the training course, a refund will also take place but an amount of 300e will be charged for administrative costs.

If the delegate registers to a subsequent training course that takes places within one year from the date of the training for which the registration was cancelled, the amount of 300e will be deducted from the cost of that subsequent training course.

Delegate substitutions can be made at any time. They must be communicated to Cullen International before the start of the course.

C. Non-attendance
In the event of non-attendance, full training/conference fees will remain payable and no refunds will be paid.

D. Changes to programme, venue or date
Cullen International reserves the right to make changes to the programme, the venue and the presenters. Cullen International also reserves the right to cancel or reschedule the training/ conference if there are insufficient participants. Delegates will be notified in good time and will be entitled to a refund of the fee if the training/conference is cancelled or is changed to a date which is not convenient for the delegate.

E. Invoicing and Payment conditions
Registrations will only be effective after payment receipt and payment must be done before the event takes place. Cullen International reserves the right to refuse attendance of a participant whose invoice has not been paid prior to the event.

Cullen International also reserves the right to refuse registrations to members of organisations who had registered participants to previous events and not paid their invoices. The delegate shall provide, while registering to attend an event, all requested information necessary

for the issue of the invoices. All invoices are payable in total, for the amount invoiced including the taxes stated on each invoice (VAT). No withholding for tax or administrative reasons will be accepted.

F. Data protection
Your personal data will be used for the purpose of organising the training or conference. Cullen International will also subsequently use such data to inform you of its future training programmes and other activities or services, unless you opt out by sending us an email. Your personal data will not be communicated to any third parties.

G. Confidentiality and Copyright
All Cullen International training/conference material is subject to normal copyright conditions. Any copy is subject to prior written authorisation from Cullen International.

The training/conference material is for the delegate's own use and may not be disclosed to any third party. It shall be treated with a high level of confidentiality, in the same way as the delegate protects its own confidential information.

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