

**Universidad Complutense de Madrid
and Instituto Complutense de Análisis Económico (ICAE)**
September 14, 2018
Seminar

***Spectrum 5.0:
Policy choices for 5G Deployment***

1. What can be expected as a society from 5G?
2. Why an auction on 5G spectrum allocation and if so, with what characteristics and conditions?
3. Maximizing revenue from the spectrum allocation or a broader measure of social welfare?
4. What if a broader agreement is considered? Benefits and possible anticompetitive effects.
5. What is the role of the Spanish government in the roll out, medium term and long term functioning of 5G?

Objective of the seminar

This 1-day Seminar will survey in the 5G perspective relevant approaches to spectrum licensing to drive the deployment of pervasive high-quality networks.

Background

Over the last two decades, spectrum policy has been generally driven by the assumptions that:

- As a public resource, government should aim to maximise the price paid by users
- Auctions are the optimal market mechanism to determine a price to be paid for spectrum use
- By actively bidding, operators implicitly expect to invest in network deployment.

Notwithstanding the huge benefits to consumers generated by the resulting market competition, policy makers today are increasingly concerned about:

- The expected importance for economic wide digitization and relative global competitiveness of the network coverage
- The corresponding deployment pace of wireless networks, focusing on 4G but also mindful of 5G and of the uncertainties surrounding 5G business models.

In the 5G perspective, frequency assignment needs re-assessing. Recent studies suggest that the conventional approach to licensing spectrum has not directly achieved connectivity policy objectives:

- Countries where operators have paid the most for spectrum over the past decade showed the worst 4G network availability¹

¹ [Study on Spectrum Assignment in the European Union](#), European Commission, 2017, p100

- Lower spectrum input costs are linked to greater price competition and higher usage²
- The efficiencies associated with retail services in mobile markets are about 240 times as large as those associated with license revenues³

The recent example of license renewal in France, the scaled down license fee expectations in Italy, consideration of improved procedures in Japan and Korea, and agreement for the RSPG to “peer-review” spectrum assignment procedures in Europe show that policy makers are starting to look at new, more dynamic approaches.

The Seminar will put forward arguments on why spectrum policy should be defined to be in line with all aspects of network deployment. It will survey the analyses of causal relationship and trade-offs between auction design, fee payment structures, and annual fees. It will also address deployment obligations and how these can best be set to achieve the objectives without distorting competition while ensuring due responsibility is placed on the public sector and local municipalities. It will highlight what best practice looks like.

The key question this Seminar will answer is which policies will lead to successful and profitable business policies, pervasive coverage, a more consistent user experience and incentivize investment and innovation across the ecosystem without distorting competition.

Programme and Participants

The Seminar will convene high level invite only participants. Telecom policy makers along with other public officials e.g. from finance, interior, senior industry leaders, will debate the findings and discuss how they might be applied in country.

Programme

Introduction (9.15)

Iñigo Herguera, Universidad Complutense Madrid, ICAE
Gerard Pogorel, Telecom ParisTech

Keynote address (9.25- 9.50)

Antonio Fernández Paniagua, Ministry Economics (Secretaria Estado de Telecomunicaciones)

9.50- 10.05: Coffee break

Session 1: (10.05 am- 11.20 am)

5G evolution or revolution?

- Gabriel Solomon, Ericsson
- Zoraida Frias/ Jorge Pérez, Universidad Politécnica de Madrid
- Erik Bohlin, Chalmers University, Sweden The International 5G perspective

² [Effective Spectrum Pricing](#), Nera Economics for GSMA, 2007

³ [What Really Matters in Spectrum Allocation Design](#), Hazlett and Munoz, 2012

- Pierre-Jean Benghozi, Ecole Polytechnique and ARCEP, France
- Daniel Olle, CNMC
- **Moderator:** Diego Rodríguez, former Board CNMC and UCM

11.20- 11.30 pm: Coffee break

Session 2: (11.30 am- 13.00 pm)

- Operators Roundtable: **Perspectives of 5G**
 - Catherine Bohill, Telefónica
 - Vodafone (TBC),
 - Jaume Pujol, Cellnex
 - María Merino, Orange
 - Moderator:** Teodosio Pérez Amaral, Universidad Complutense de Madrid
- Martin Cave, LSE: How disruptive will 5G be, and what regulatory response may be needed?

Lunch: (13.00 am-14.30 pm)

Afternoon

Session 3: (14.30 pm-16.30 pm)

Radio spectrum assignment and business cases

- Gerard Pogorel, Telecom ParisTech: New perspectives on spectrum assignment
- Pierre-Jean Benghozi, Ecole Polytechnique and ARCEP, France: ARCEP on 4G frequencies renewal and perspectives for 5G spectrum
- **Moderator:** Iñigo Herguera, Universidad Complutense de Madrid

Coffe and farewell: (16.30 pm)

Date: September 14, 2018

Place: Instituto Complutense de Análisis Económico (ICAE), Edificio de Primer Curso (first floor, room N.101), Campus de Somosaguas, Universidad Complutense de Madrid. This is a large grey building across the parking lot in front of the light railway station. Ask the janitors for directions once you are in the building. There will be signs also.