

Stakeholder workshop

Assessment of socio-economic aspects of spectrum harmonisation regarding wireless microphones and cordless video-cameras)









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[Agenda

-  Introduction
-  Objectives of the workshop
-  Methodology
-  Conceptualising the value of PMSE
-  Market overview
-  Proposed initiatives
-  Impact analysis
-  Conclusions and recommendations
-  Q&A

[Introduction to the study

1. Objective:

- ✓ Assess socioeconomic impacts of different policy options for PMSE spectrum access considered by the European Commission
- ✓ Provide input into finding a long-term sustainable solution regarding PMSE spectrum access

2. Scope & timing:

- ✓ Wireless microphones/IEMs & cordless video cameras
- ✓ Jan 2013-July 2013

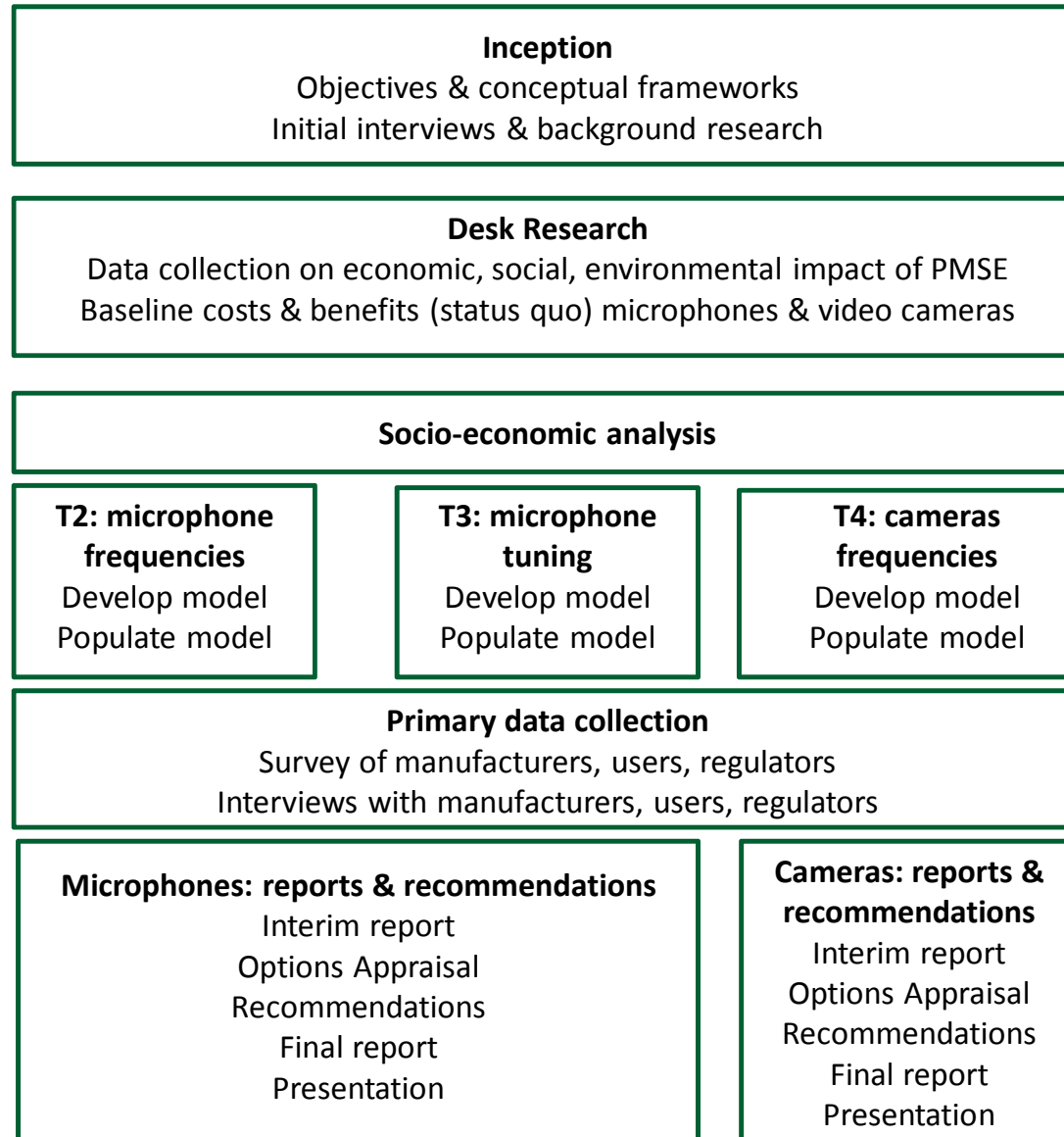
3. Methodological challenges:

- ✓ Conceptualising the 'value' of PMSE
- ✓ Lack of data / stakeholder identification
- ✓ Open discussion on harmonisation options
- ✓ Uncertainty about evolution of status quo
- ✓ Importance of unquantifiable impacts

[Objectives of the workshop

1. **Present preliminary results** of the study to date
2. **Elicit stakeholder feedback** on preliminary results
3. **Gather specific stakeholder input** to outstanding questions
4. **Discuss** any additional issues & concerns

Methodology / approach



[Conceptualising the value of PMSE

1. Narrow

- ✓ PMSE industry, regulators & users
- ✓ Pros: clear and well defined, strong attribution
- ✓ Con: under-estimates impacts, does not account for catalyst function of PMSE

2. Mid level

- ✓ industry, regulators & PMSE users and consumers of content
- ✓ Value for citizens largely down to “quality of events” (recording, diversity, ease)
- ✓ Pros: PMSE as a content catalyst (similar to e.g. mobile handsets)
- ✓ Cons: requires qualitative assessment

3. Broad

- ✓ Industry, regulators, users & consumers of content & parallel sectors
- ✓ Pros: comprehensive, PMSE as a catalyst, can help set out the range of impacts
- ✓ Cons: not quantifiable (no markets), weak attribution, interference, could lead to over-estimate

[Selecting the appropriate study scope

1. Scope **needs to reflect the objectives** of the study
2. Objective here is not to estimate the total value of PMSE (and/or compare it to other industries) but to assess socio-economic impacts to support evaluation of policy options
3. We need to determine whether the impact of the Commission's proposal is positive (i.e. a **cost benefit analysis**, not a net present value analysis!)
4. This can combine quantitative and qualitative methods.

Market overview – microphones (1/2)

1. EU market size:

- ✓ €170m (adapted from PAMA)
- ✓ 260,000 units/systems sold in 2011 (adapted from PAMA)
- ✓ 2m wireless production devices in Europe (APWPT)
- ✓ Demand growth estimates (4-7%)

2. Equipment:

- ✓ Wide range of products (handheld microphone, body pack transmitters, receivers, IEMs, and monitoring units)
- ✓ Diverse price range (e.g. <€100 to >€5,000)
- ✓ Average lifespan of a mic: 8 years
- ✓ Average price: €650 (based on total market size and number of units)

3. Companies :

- ✓ Strong presence of European companies: Sennheiser, Shure, Audio Technica, Robert Bosch, Beyerdynamic, Harman, Sony Europe, Panasonic

Production	Number of links	Total cost of wireless microphones used
Typical studio production	Up to 24	Up to € 15,600
Typical event	Up to 50	Up to € 32,500
Large event	Up to 300	Up to € 195,000

Market overview – microphones (2/2)

1. Current demand for spectrum

- ✓ 96MHz in urban areas (APWPT)
- ✓ Varies by area, time and type of use

PMSE	Number of systems	Spectrum requirement
Village countryside (<500 people/sqkm)	12	>12Mhz
Village countryside (<500 people/sqkm, 1 small event)	38	>40Mhz
Town (500-1000 people/sqkm)	56	>80Mhz
City (1000-2500 people/sqkm)	>102	>100Mhz
Capital city (>2500 people / sqkm)	>200	>130Mhz

Source: Dutchview

2. Drivers of future demand for spectrum

- ✓ number of events;
- ✓ complexity of events
- ✓ adoption of equipment per event

Market overview – cameras

1. EU market size:

- ✓ Little available market data, EU market for broadcast services approx £54.9m (€64.4m) (extrapolated from Vislink)
- ✓ 1,300 units sold per annum in the EU
- ✓ Significant future growth expected (4% -Vislink)
- ✓ Almost all users are professional

2. Equipment:

- ✓ Body, lens, wireless transmitter
- ✓ Avg price per system of approximately €25,000
- ✓ Rental costs €300-€1,700

3. Companies:

- ✓ Vislink, Cobham, IDX, Videosys, VTQ Videotronik GmbH, Arnold & Richter Cine Technik
- ✓ Importance of rental companies

Production	Number of links	Total cost of cordless camera systems used
Typical studio production	Up to 8	Up to € 200,000
Typical event	Up to 20	Up to € 500,000
Large event	Up to 30	Up to € 750,000

[Key issues to be addressed at EU level

1. Market fragmentation
2. Lack of spectrum
3. Uncertainty about future availability of spectrum

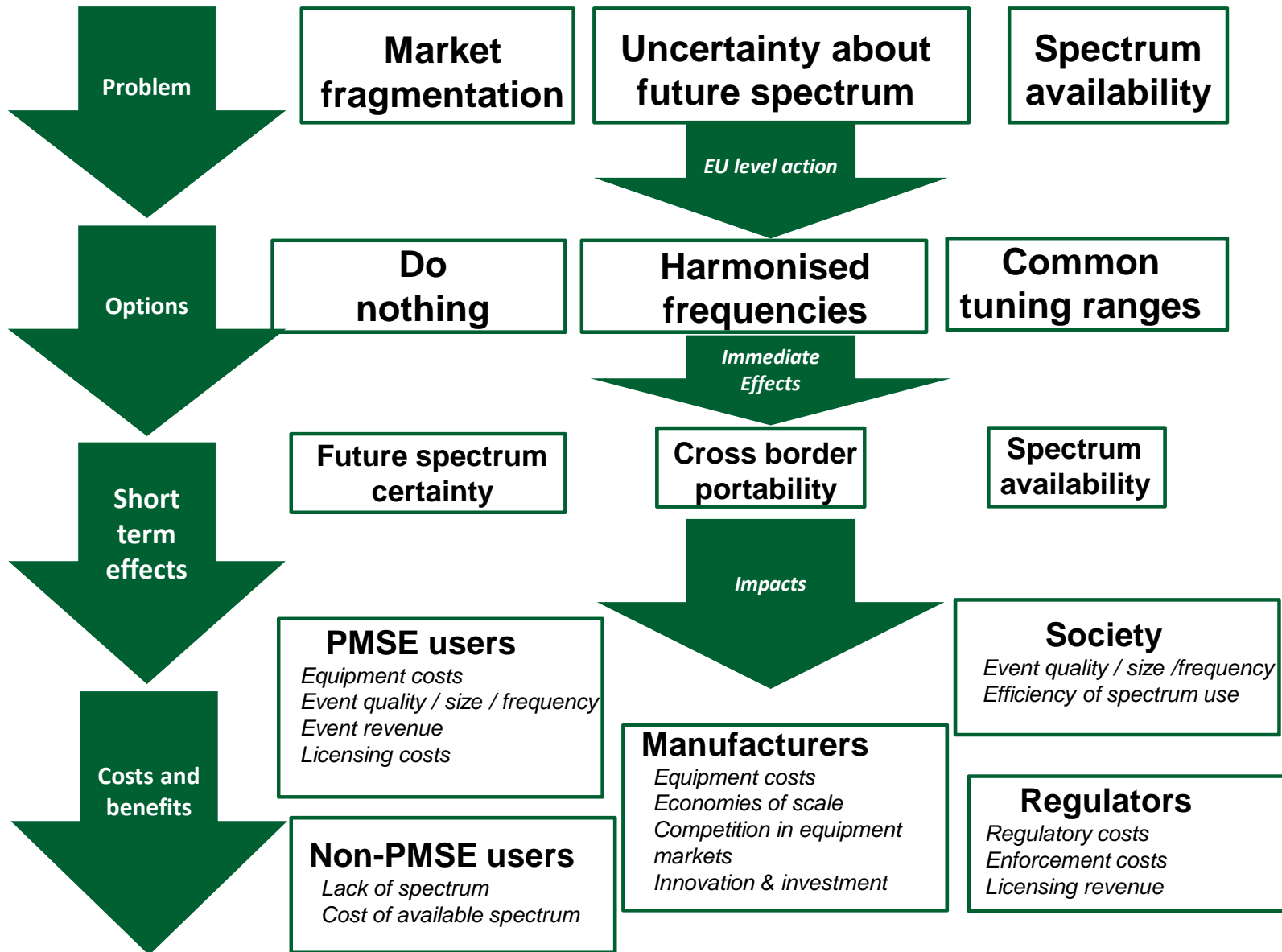
Proposed initiatives - microphones

- **Option 1:** Do nothing at EU level
- **Option 2:** 60 MHz of EU level common tuning ranges
 - 29.7 – 68 MHz;
 - 174 – 216 MHz;
 - 470 – 790 MHz;
 - 821 – 832 MHz;
 - 863 – 865 MHz (Licence Exempt);
 - 1785 – 1805 MHz,
- **Option 3:**
 - ✓ 30MHz harmonised spectrum
 - 821 – 832 MHz;
 - 1785 – 1805 MHz;
 - ✓ 30MHz common tuning ranges
 - 29.7 – 68 MHz;
 - 174 – 216 MHz;
 - 470 – 790 MHz,
 - 863 – 865 MHz (Licence Exempt).

[Proposed initiatives - cameras

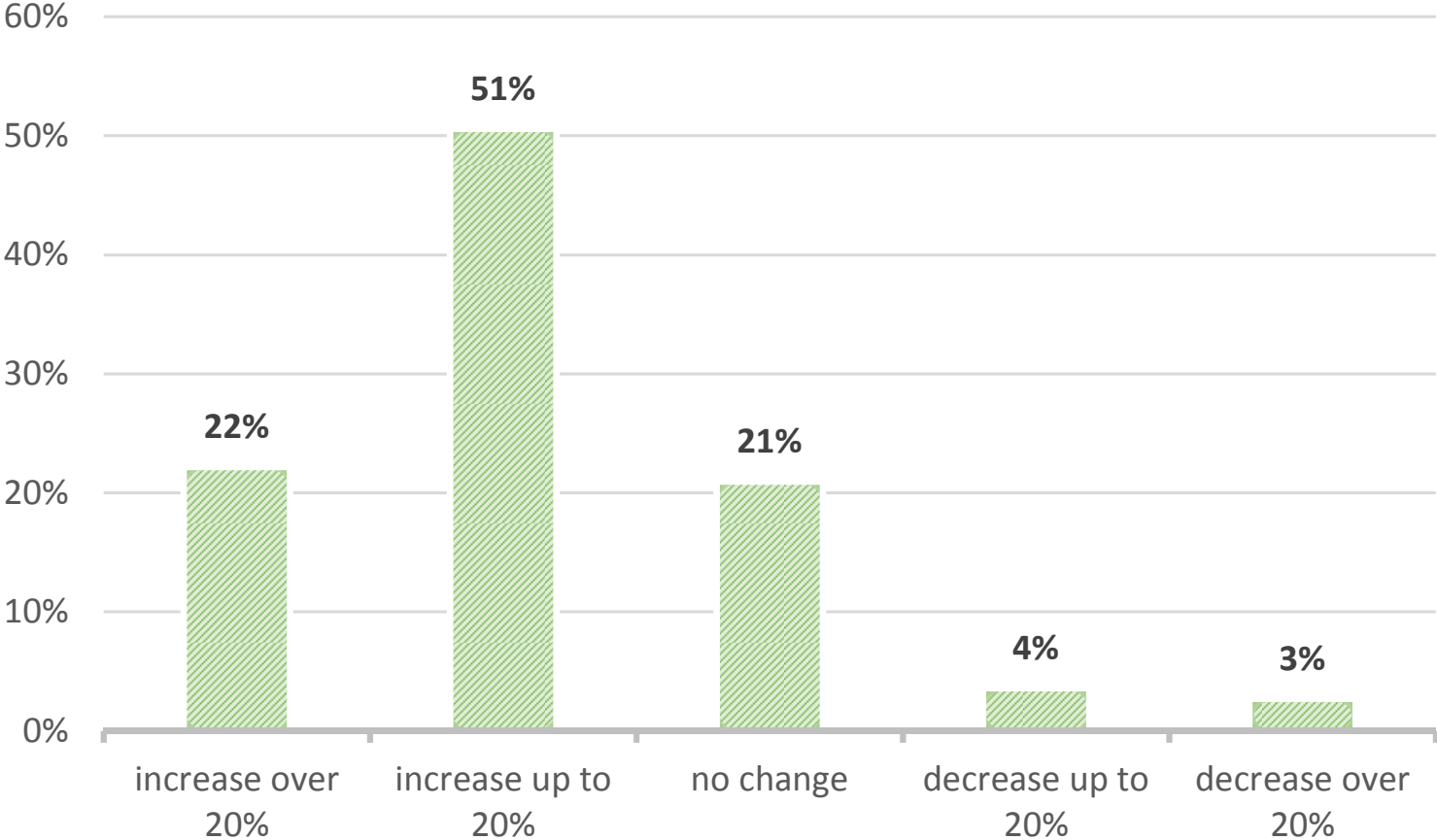
- **Option 1:** Do nothing at EU level
- **Option 2:**
 - ✓ 4 * 10 MHz of EU level common tuning ranges in 2025-2500MHz across MS

Impact framework



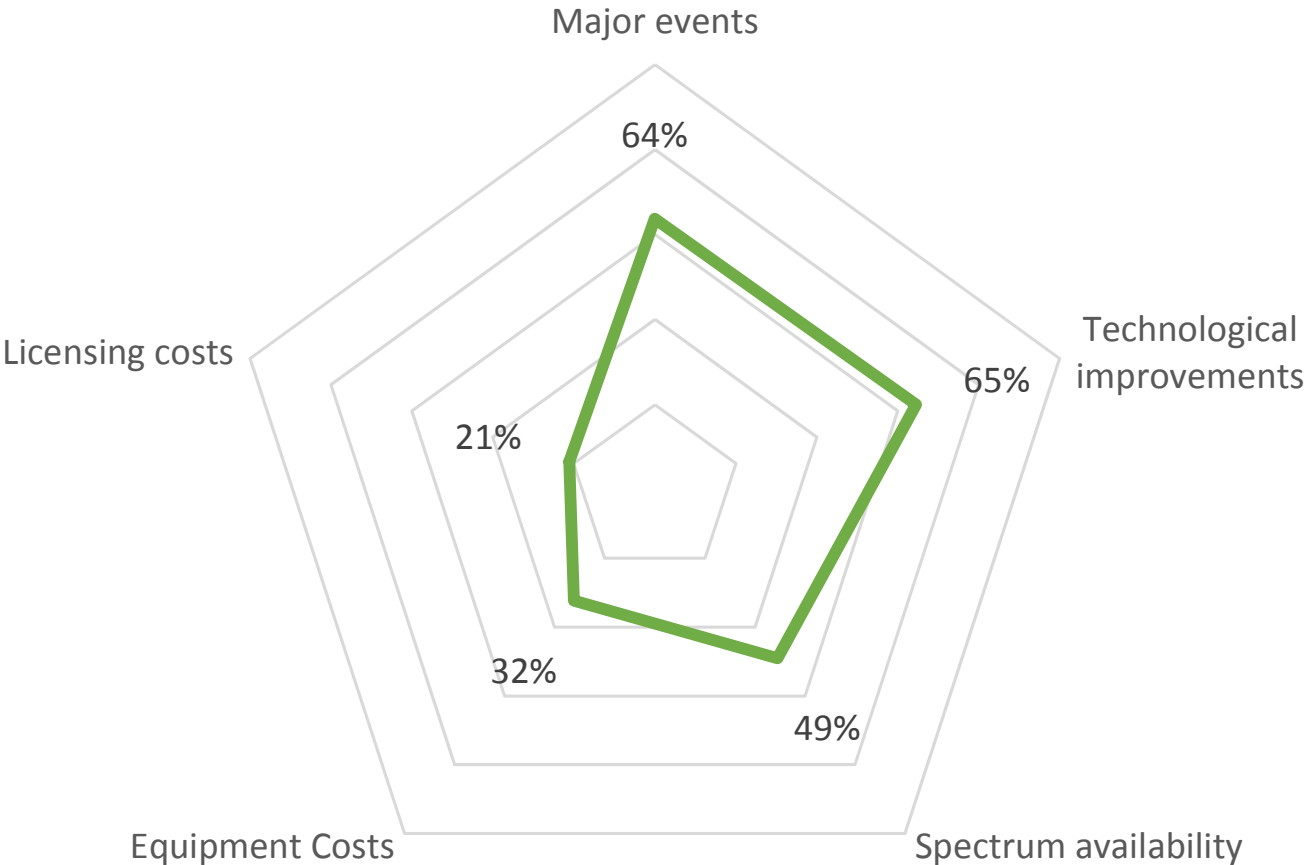
Descriptive analysis (1/7)

Expected usage of wireless microphones in the next 5 years, by users in the absence of EU intervention



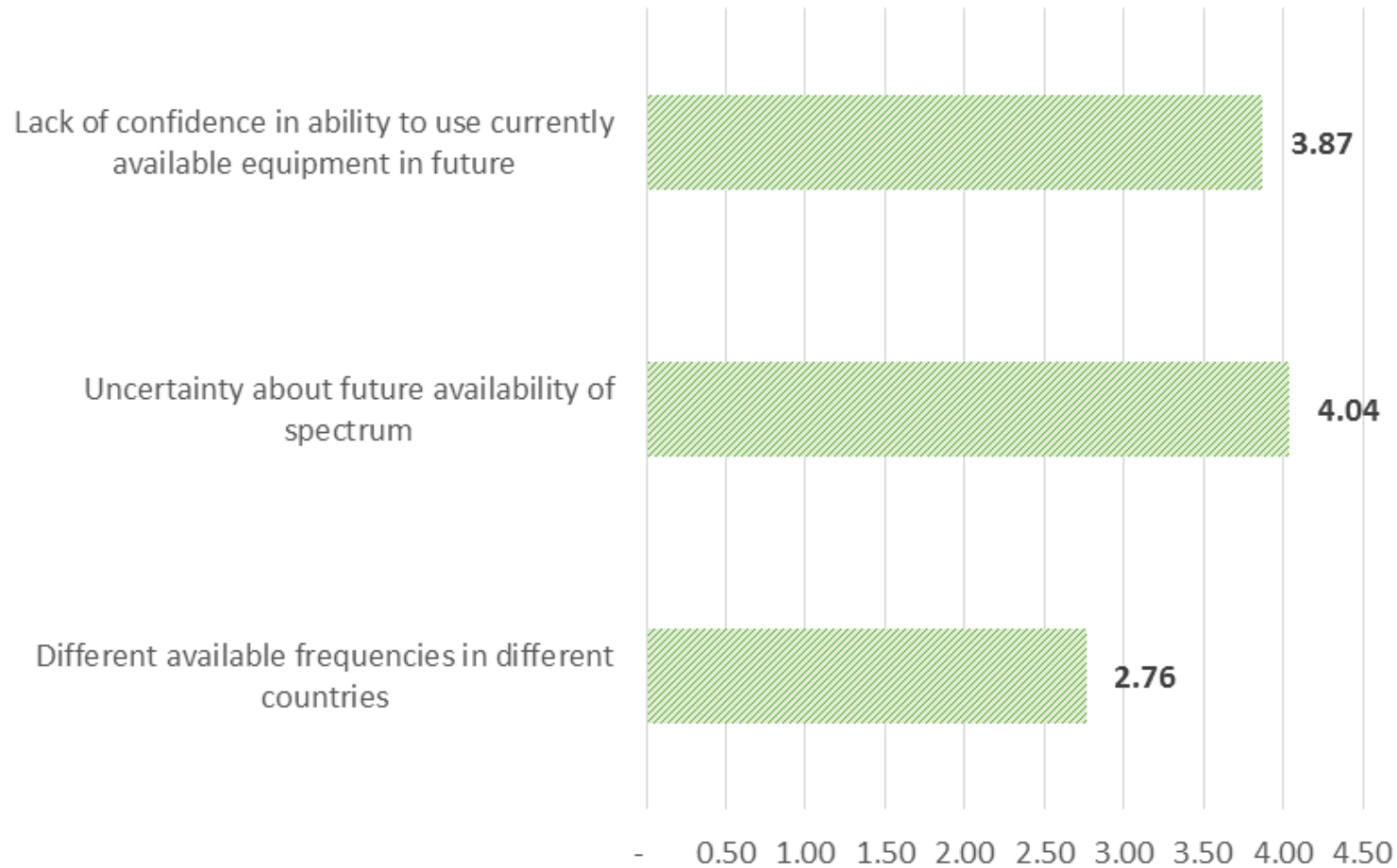
Descriptive survey analysis (2/7)

User perception on current drivers of change in use of wireless microphones and IEMs



[Descriptive survey analysis (3/7)

User perception of current barriers to investment in wireless microphones (1=not important, 5=very important)

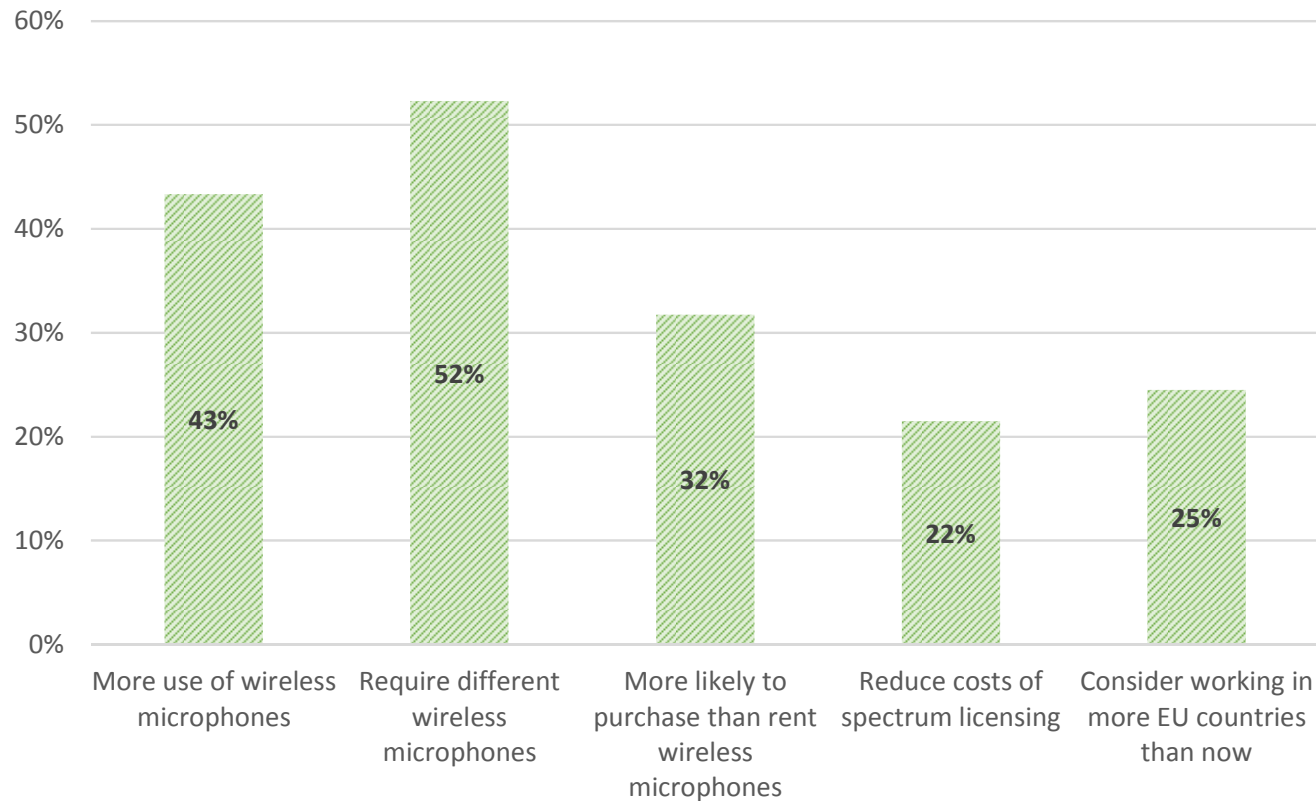


Descriptive survey analysis (4/7)

Do nothing: no large impact for users

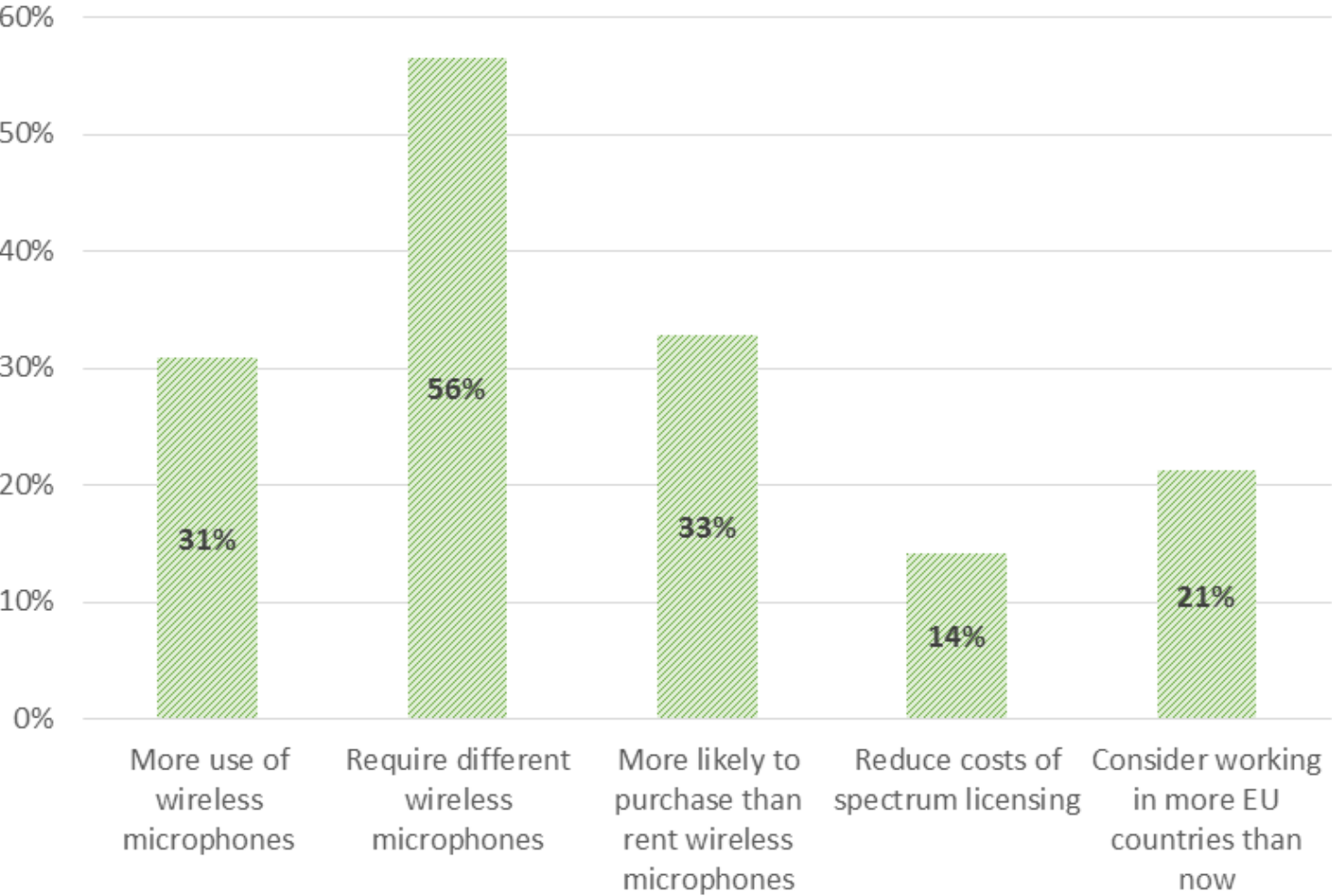
- ✓ 50% no change on number of mics, 25% increase, 25% decrease
- ✓ 40% no change of cost per event, 60% increase
- ✓ >60% no change of licensing costs per event

User views on impact of common tuning ranges



Descriptive survey analysis (5/7)

User views on impact of harmonised spectrum



Descriptive survey analysis (6/7)

1. Ranking by users

	Option 1: do nothing	Option 2: tuning ranges	Option 3: harmonised bands
Best ranked	32%	27%	41%
Second rank	18%	60%	22%
Third ranked	50%	13%	36%
Aggregate preference¹	37%	45%	48%

2. Ranking by manufacturers

- ✓ Option 3 is best, followed by option 2. Option 1 is worst
- ✓ But: none of the options is sufficient

3. Ranking by regulators

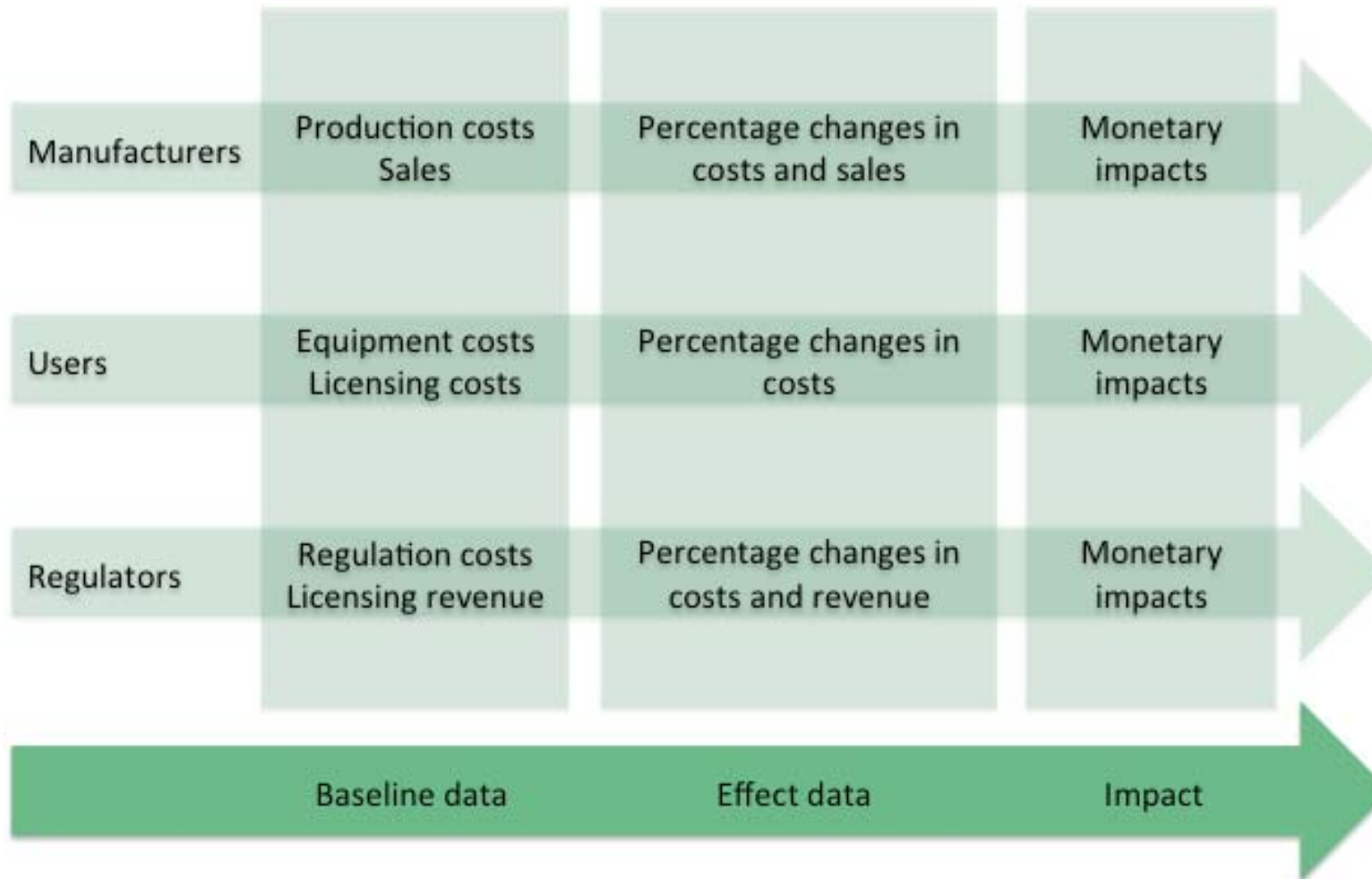
- ✓ Option 3 & 1 most controversial
- ✓ Option 2 ranked best

[Descriptive survey analysis(7/7)

- **User views on expected camera use in absence of EU intervention**
 - ✓ 46%: frequently hold events in more than one country
 - ✓ 64%: equipment is tuneable to work across most EU countries
 - ✓ 61%: will invest in cordless cameras over the next 5-10 years to upgrade & replace equipment
 - ✓ 70%: increased use of cordless cameras in future irrespective of EU action
 - ✓ 70% due to nature & number of major events,
 - ✓ 87% due to technology
 - ✓ About half: lack of spectrum could be constraint on future use
- **User views on current barriers in cordless camera market**
 - ✓ 37% differences in frequency bands across MS
 - ✓ 50% uncertainty over future availability of spectrum
 - ✓ 40% lack confidence in ability to use current equipment in future.
- **User ranking of options:**
 - ✓ 58% prefer option 2, 42% prefer do nothing

Impact modelling(1/3)

Quantitative analysis approach



Impact modelling (2/3)

Impact of wireless microphone options compared with do nothing

Option	Manufacturers	Regulators	Users	Total	Additional qualitative assessment (survey)
Option 2	€ 10,949,901	-€ 17,685	€ 60,317,891	€ 71,250,107	<ul style="list-style-type: none"> • Option 3 has highest regulator, manufacturer approval & user approval • Majority of users would like to see some EU level intervention • Option 3 has highest user approval overall but also stronger opposition than option 2 • Option 2 is the least controversial option for regulators
Option 3	€ 13,510,537	€ 4,268	€ 29,910,424	€ 43,425,229	

- Modelling assumptions
- Usability of duplex gap for professional users is key driver of difference in impact

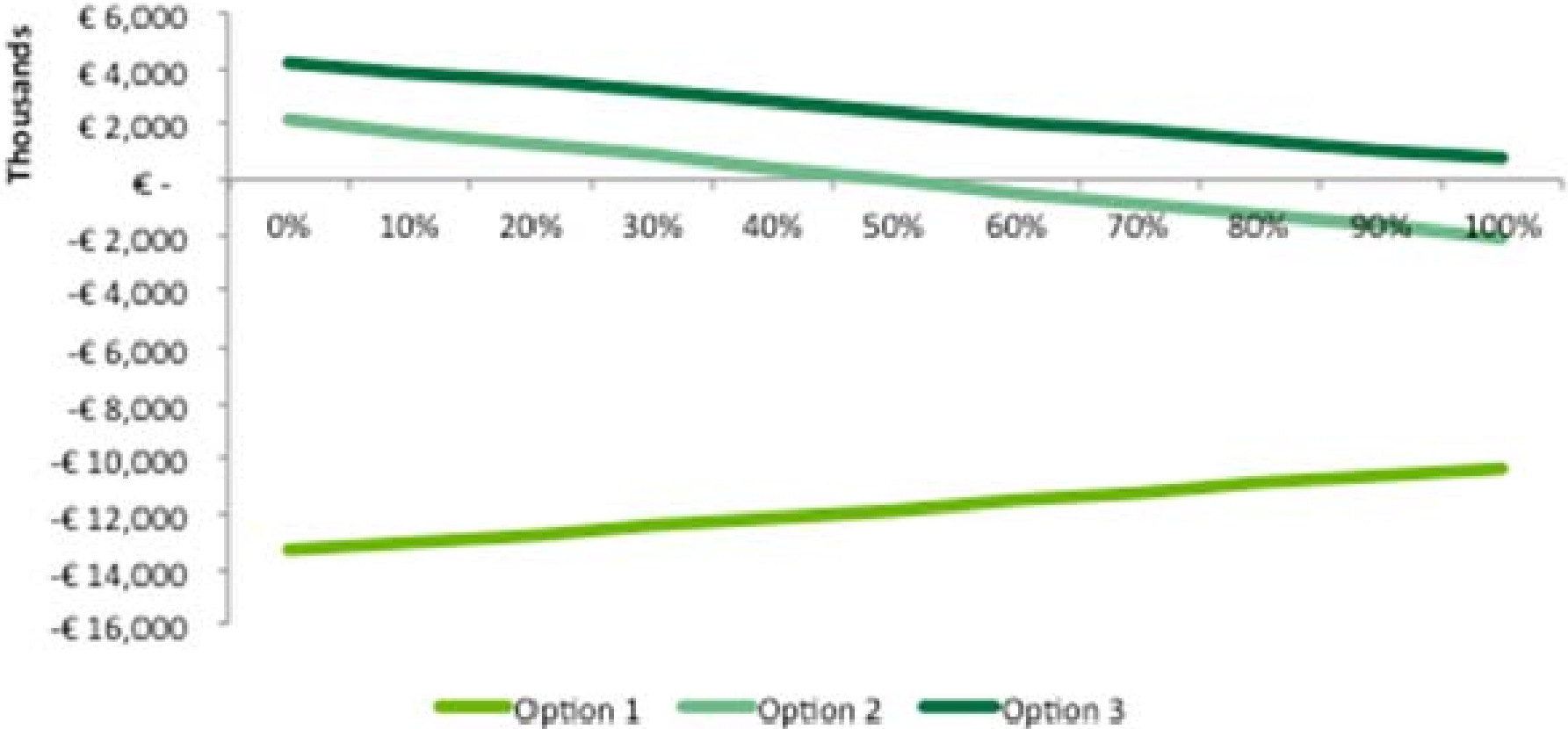
Impact modelling (3/3)

Impact of cordless camera option compared with do nothing

Option	Manufacturers	Regulators	Users	Total	Additional qualitative assessment (survey)
Option 2	€2,077,515	-€ 21,873	<i>No quantitative data available.</i>	Approx. €2m	<ul style="list-style-type: none"> Option 2 preferred by regulators Insufficient information from manufacturers Majority of users prefer option 2 but lack of clarity over the content of the option, common spectrum not considered sufficient

Sensitivity analysis

Example of an analysis to test the impact of different cost estimates on manufacturers



[Conclusions & recommendations

1. Microphones

- ✓ Among options presented, recommend option 2 (common tuning ranges)
 - ➔ Most positive overall economic impact (esp for users)
 - ➔ Least controversial option for all stakeholders
 - ➔ Leaves significant level of flexibility for Member States
 - ➔ Takes into account concerns regarding usability of duplex gap
- ✓ Input into long-term sustainable solution regarding PMSE spectrum access

2. Cameras

- ✓ Recommend the principle of common tuning ranges
 - ➔ Broad support for this principle
 - ➔ Little overall economic impact
 - ➔ Spectrum ranges needs to be defined (also in light of recent CEPT report)
- ✓ More work is needed before specific options can be taken forward

[Q&A and contact details

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