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|  | ASIA-PACIFIC TELECOMMUNITY |  |
| **The 28th Meeting of the APT Wireless Group****(AWG-28)** |  |
| 6 – 14 September 2021, Virtual/Online Meeting | 14 September 2021 |

Source: AWG-28/OUT-12

**questionnaire ON wireless powEr transmission**

**for moving machines**

**1. Introduction**

Today, wireless power transmission (WPT) technologies are spreading to various applications such as machines, electric carts, electric wheelchairs, electric housewares, drones, IoT, and so on. Recently, as the demand for noncontact service has increased due to COVID-19, the use of delivery machines and drones is rapidly increasing and the adoption of wireless charging technologies for those is becoming important.

At the 27th meeting of AWG, TG-WPT prepared a new work item on wireless power transmission for moving machines for survey report of APT region by reviewing specific case through the input contribution AWG-26/INP-72.

The purpose of survey is to share the useful information of wireless charging technologies for moving machines under review and development in APT countries.

1. **Objective of the Questionnaire:**

The objective of the questionnaire is as follows.

- To survey the current technical information including designated WPT transmission power or frequency in APT member countries in order to identify the commonality and difference of WPT for moving machines in APT member countries

- To draft and complete the APT survey Report on WPT for moving machines.

- To collect information on frequency bands to use, technical regulations, if any and related matters of WPT for moving machines.

Moving machines within the scope of this questionnaire are

- A mechanically, electrically, or electronically operated device for performing a task which provides various services in human life

- Possible applications can include, but are not limited to, housework, life support, light transport, cleaning, entertainment and etc.

- Moving machines can include, but are not limited to, Automated Guided Vehicle (AGV), service machine, transport supporting machine (e-bike, wheel chair and etc.), drone and etc.

And moving machines within the scope of this survey does not address

- Portable devices which are objects that must be moved by a person (Smart devices, Wearable devices, Tablets, Laptop, Camera and etc.)

- Electric Vehicles (EVs) that uses electric motors for transport (EVs include road and rail vehicles, water vessels, electric aircraft and etc.)

1. **Responsible Group**

Task Group on Wireless Power Transmission (TG WPT)

1. **Rapporteur of the Questionnaire:**

Chan Hyung Chung, backbum@rapa.or.kr (Chairman of TG WPT)

1. **Meeting at which the Questionnaire was approved:**

AWG-28 Document: AWG-28/OUT-12

1. **Target Responder:**

APT Members

1. **Deadline for Responses:**

AWG-30

**Questionnaire Part**

**Administration Information and Profile:**

Name of organization : <please type your answer here>

Name of contact person : <please type your answer here>

Email Address : <please type your answer here>

**Questions:**

Following questions are to survey the technologies, frequency bands and technical regulations in APT member countries currently or in near future.

**Question 1:** Could you please list the three most commonly used Moving Machines in your country in order of priority?

1.1 Factory Automatic Logistics Transfer Machine (AGV)

1.2 Mobility assistance machines in living areas (E-Mobility, autonomous wheelchairs, etc.)

1.3 Automatic cleaning machine

1.4 A machine that guides places such as restaurants

1.5 Multimedia machine (machine dog, etc.)

1.6 Drone

1.7 Goods Delivery Machine

1.8 Fire-fighting assistant machine

1.9 Emergency patient transfer machine

1.10 Others (If the answer selects ‘others’, please describe what it is. )

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| **Answer of Question 1:** |

**Question 2:** Could you please list the three moving machines in order of priority that are expected to be used or discussed in the next few years due to their high need for use in your country?

2.1 Factory Automatic Logistics Transfer Machine (AGV)

2.2 Mobility assistance machines in living areas (E-Mobility, autonomous wheelchairs, etc.)

2.3 Automatic cleaning machine

2.4 A machine that guides places such as restaurants

2.5 Multimedia machine (machine dog, etc.)

2.6 Drone

2.7 Goods Delivery Machine

2.8 Fire-fighting assistant machine

2.9 Emergency patient transfer machine

2.10 Others (If the answer selects ‘others’, please describe what it is. )

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| **Answer of Question 2:** |

**Question 3:** Could you please select the maximum transmission power in your country to be used for wireless charging of the Moving Machine in a personal space (home)?

3.1 15 W

3.2 60 W

3.3 200 W

3.4 1 kW

3.5 2.4 kW

3.6 3.3 kW

3.7 6.6 kW

3.8 11 kW

3.9 22 kW

3.10 Others (If the answer selects ‘others’, please describe what it is. )

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| **Answer of Question 3:** |

**Question 4:** Could you please select the maximum transmission power in your country to be used for wireless charging of the Moving Machine used in living areas (apartment complex, hospital, hotel, restaurant, airport, etc.)?

4.1 15 W

4.2 60 W

4.3 200 W

4.4 1 kW

4.5 2.4 kW

4.6 3.3 kW

4.7 6.6 kW

4.8 11 kW

4.9 22 kW

4.10 Others (If the answer selects ‘others’, please describe what it is. )

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| **Answer of Question 4:** |

**Question 5:** Could you please select the maximum transmission power in your country to be used for wireless charging of the Moving Machine used in Industrial area (factory, logistics center, etc.)?

5.1 15 W

5.2 60 W

5.3 200 W

5.4 1 kW

5.5 2.4 kW

5.6 3.3 kW

5.7 6.6 kW

5.8 11 kW

5.9 22 kW

5.10 Others (If the answer selects ‘others’, please describe what it is. )

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| **Answer of Question 5:** |

**Question 6:** Could you please select frequency ranges that are discussed or will be used for wireless charging of the Moving Machine in your country?

6.1 19 - 21 kHz

6.2 55 – 57 kHz

6.3 63 - 65 kHz

6.4 79 - 90 kHz

6.5 100 – 205 kHz

6.6 277 – 357 kHz

6.7 6.78 MHz

6.8 902 - 920 MHz

6.9 2.4 – 2.500 GHz

6.10 5.725 – 5.875 GHz

6.11 Others (If the answer selects ‘others’, please describe what it is. )

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| **Answer of Question 6:** |

**Question 7:** Could you please select the wireless communication methods for the discussion to be used when wireless charging and controlling the Moving Machine in your country?

7.1 NFC (Near Field Communication)

7.2 Zigbee

7.3 Bluetooth

7.4 Wi-Fi

7.5 UWB

7.6 LoRaWan

7.7 Z-wave

7.8 Others (If the answer selects ‘others’, please describe what it is.)

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| **Answer of Question 1 to 7 relations:****Examples**Q1:1.1- Q2: 2.2 - Q3: 3.2- Q4: 4.3- Q5: 5.5-Q6: 6.5- Q7: 7.3Q1:1.2- Q2: 2.3 - Q3: 3.5- Q4: 4.2- Q5: 5.3-Q6: 6.3 -Q7: 7.4 |

**Question 8:** Could you please briefly describe the company or product that sells or plans to sell products related to wireless charging and control of Moving Machines in your country?

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| **Answer of Question 8:** |

**Question 9:** If there are any regulations or laws that require special attention when wireless charging and controlling the Moving Machine in your country, could you please briefly describe the sentences?

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| **Answer of Question 9:** |

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