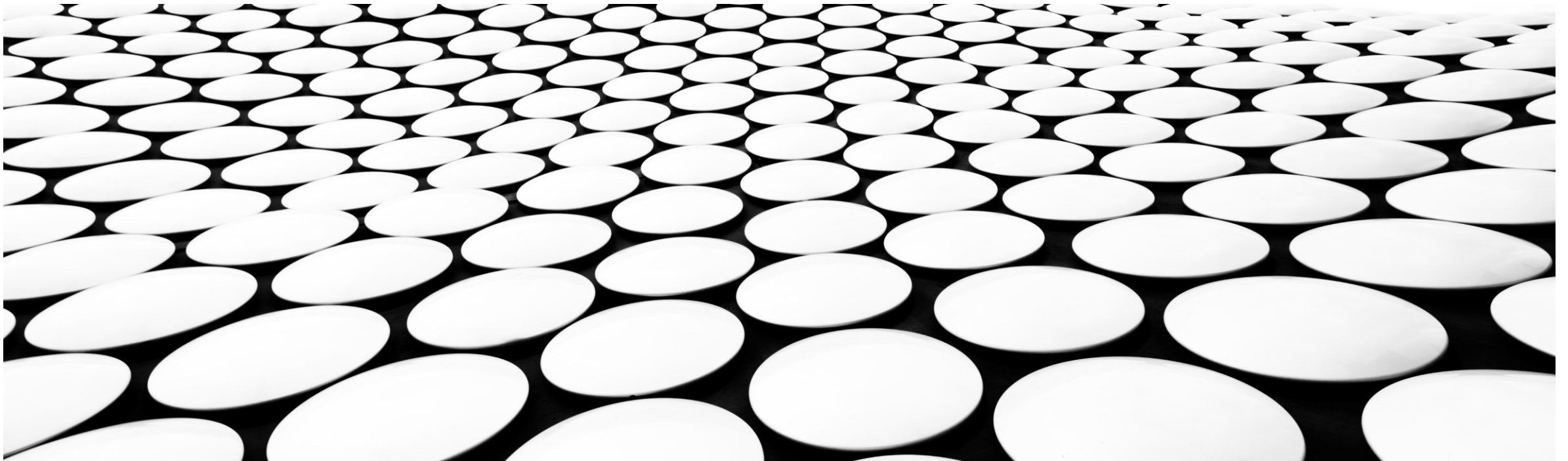# 14TH SYMPOSIUM ON ICT, ENVIRONMENT, CLIMATE CHANGE AND CIRCULAR ECONOMY

## SESSION 2: DAMAGE PREVENTION AND SAFETY: MAKING DIGITAL TECHNOLOGIES RELIABLE

ITU-T STUDY GROUP 5, *EMF, ENVIRONMENT, CLIMATE ACTION, SUSTAINABLE DIGITALIZATION, AND CIRCULAR ECONOMY*
*MICHAEL MAYTUM, QUESTION 2 RAPPORTEUR*

# CONNECTING AND PROTECTING THE INTERNET OF THINGS (IOT)

Resistibly threat ingress considerations are

- Local or remote power feed

- Data transfer medium; wireless, metallic cable link (screened or unscreened) or optical (fibre)Equipment safety (such as fire, fragmentation and fumes)

- Green credentials

- Resistibly to environmental threats (temperature, fluids, large electrical transients (lightning, power faults) and EMC)

# CONNECTING AND PROTECTING THE INTERNET OF THINGS (IOT)

**Internet of Things (IoT):** global infrastructure for the information society enabling advanced services by interconnecting (physical and virtual) things based on existing or evolving interoperable information and communication technologies

One big network!

Considerations are

- User safety (EMF)

- Equipment safety (such as fire, excessive voltage or current, fragmentation and fumes)

- Green credentials

- Resistibly to environmental threats (temperature, fluids, large electrical transients (lightning, power faults) and EMC)

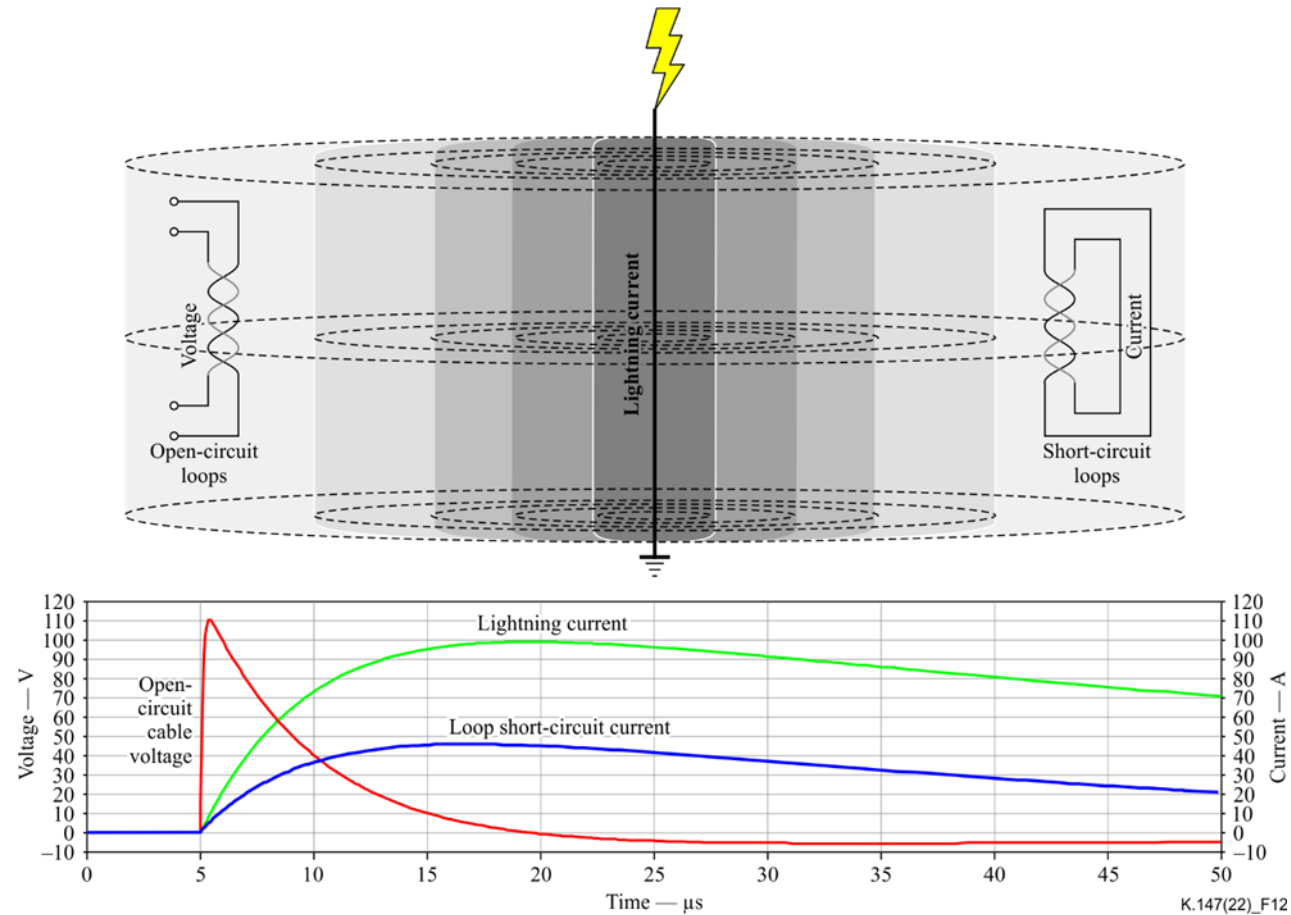# CONNECTING AND PROTECTING THE INTERNET OF THINGS (IOT)

Surge coupling mechanisms

ITU-T K.39 states that there are four main coupling mechanisms for surges to couple into networks and equipment:

- direct coupling (permanent or transient includes earth potential rise (EPR));

- magnetic coupling;

- electric coupling;

- electromagnetic coupling.

# CONNECTING AND PROTECTING THE INTERNET OF THINGS (IOT)

Example of surge coupling mechanisms

# CONNECTING AND PROTECTING THE INTERNET OF THINGS (IOT)

Example of magnetic surge coupling mechanism

# CONNECTING AND PROTECTING THE INTERNET OF THINGS (IOT)

ITU-T Study Group 5 Recommendations

Recommendations are usually crafted to cover specific circumstances

https://www.itu.int/ITU-T/recommendations/index_sg.aspx?sg=5

## ITU-T Recommendations under Study Group 5 responsibility

— SG5 Recommendations

    &#43;  K series: Protection against interference

    &#43;  L series: Environment and ICTs, climate change, e-waste, energy efficiency; construction, installation and protection of cables and other elements of outside plant