29TH WORLD RADIOCOMMUNICATION SEMINAR
30 November – 11 December 2020

ITUWRS ONLINE2020

# Salient issues in ITU-R Study Group 3 and its Working Parties

Carol Wilson

Chairman, ITU-R Study Group 3

www.itu.int/go/wrs-20

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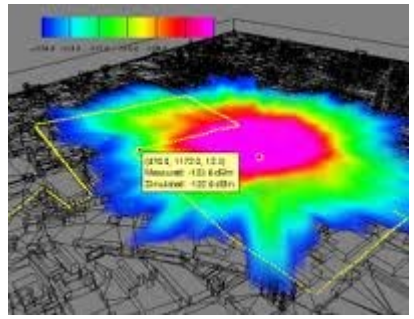
# Contents


- Scope and Working Parties

- Building entry loss (BEL)
- Clutter loss
- HAPS/HIBS activity
- Extending the upper frequency limit for short range propagation methods
- Software, data and validation examples

- Participation welcomed by all ITU-R members



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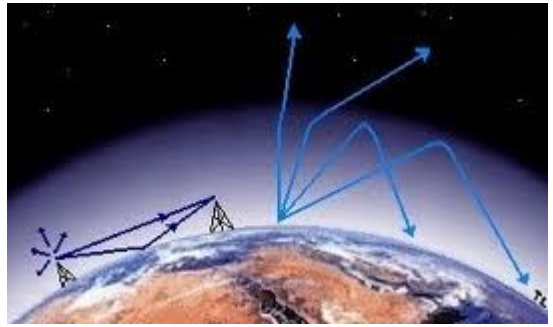
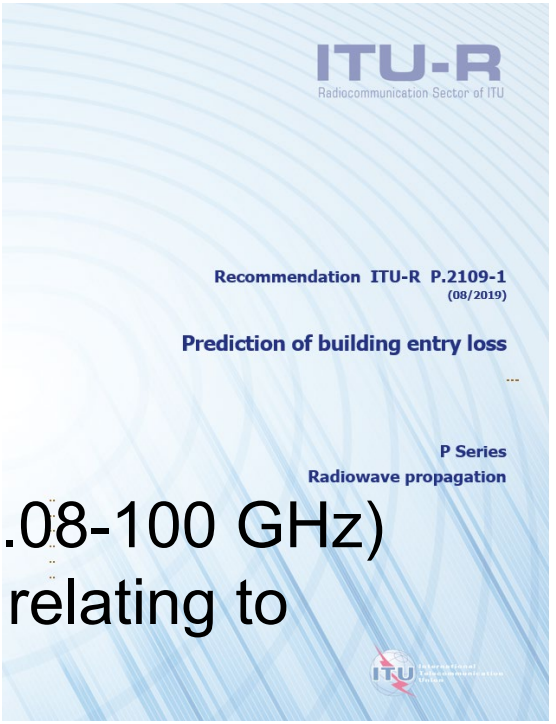


# Scope of work and structure

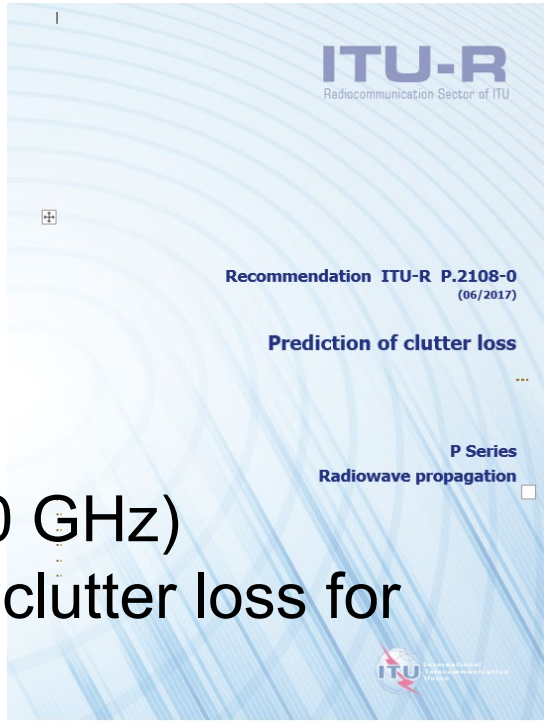
- Scope: “Propagation of radio waves in ionized and non-ionized media and the characteristics of radio noise, for the purpose of improving radiocommunication systems.” **All services, all frequencies, all geometries**.
- WP 3J – Fundamentals: radiometeorology, physics, statistics
- WP 3K – Point-to-area: propagation for mobile and broadcasting
- WP 3L – Ionospheric and radio noise
- WP 3M – Point-to-point, satellite and interference paths

# Building entry loss (BEL)



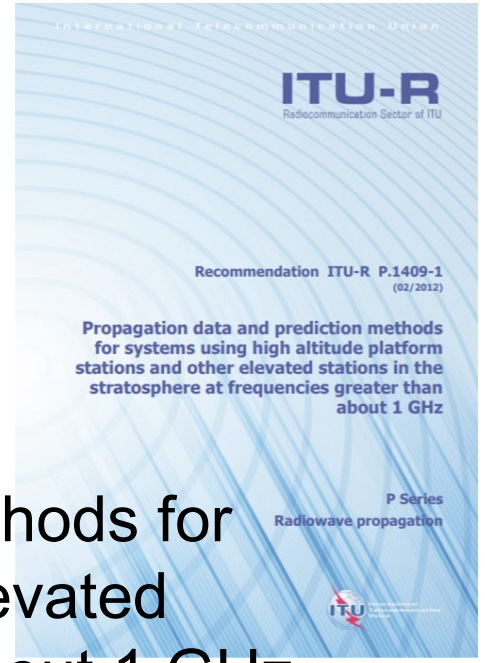

- Rec. ITU-R P.2109 – Prediction of building entry loss (0.08-100 GHz)
- Rep. ITU-R P.2346 - Compilation of measurement data relating to building entry loss
- Relevant to all WRC-23 agenda items where one terminal is indoor and the other outdoor (e.g. WRC-23 AIs 1.1, 1.2, 1.4, 1.5, 1.18, 9.1 c and potentially more)
- Need to develop site-specific model, potentially other building types, and to consider in combination with clutter loss
- Intersessional work: CG 3J-3K-3M-8 – Chairman: Richard RUDD (G)

# Clutter loss



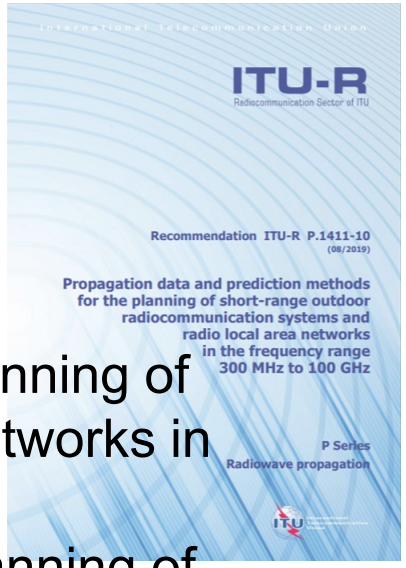

- Rec. ITU-R P.2108 – Prediction of clutter loss (0.03-100 GHz)
- Rep. ITU-R P.2402 - method to predict the statistics of clutter loss for earth-space and aeronautical paths
- Relevant to all WRC-23 agenda items where one or both terminals are immersed in local clutter (e.g. WRC-23 AIs 1.1, 1.2, 1.4, 1.5, 1.18, 9.1 c and potentially more)
- Need to extend to other environments and to consider in combination with building entry loss
- Intersessional work: CG 3K-3M-12 – Chairman: Clare ALLEN (G)

# HAPS/HIBS activity

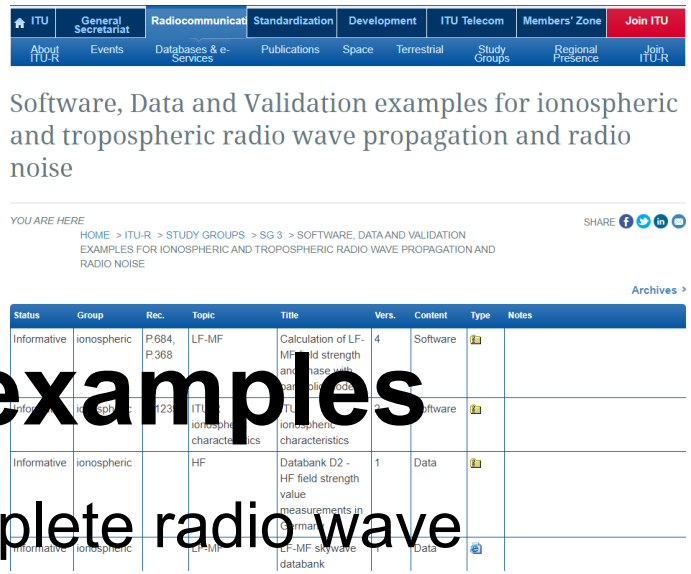



- Rec. ITU-R P.1409 – Propagation data and prediction methods for systems using high altitude platform stations and other elevated stations in the stratosphere at frequencies greater than about 1 GHz
- Relevant to WRC-23 agenda items where one terminal is HAPS/HIBS (e.g. WRC-23 AI 1.4)
- Intersessional work: CG 3J-3K-3M-14 – Chairman: Hajime SUZUKI (AUS)

# Extending the upper frequency limit for short-range prediction methods




- Rec. ITU-R P.1411 – Propagation data and prediction methods for the planning of short-range outdoor radiocommunication systems and radio local area networks in the frequency range 300 MHz to 100 GHz
- Rec. ITU-R P.1238 - Propagation data and prediction methods for the planning of indoor radiocommunication systems and radio local area networks in the frequency range 300 MHz to 450 GHz
- Rep. ITU-R P.2406 - Studies for short-path propagation data and models for terrestrial radiocommunication systems in the frequency range 6 GHz to 450 GHz – collation of measurement data
- Need to extend (and validate) prediction methods up to at least 450 MHz
- Relevant to WRC-23 agenda items for short-range systems and/or frequencies above ~6 GHz
- Intersessional work: CG 3K-6 – Chairman: Juyul LEE (Republic of Korea)




# Software, data and validation examples

- Validated software implementation of part or complete radio wave propagation prediction methods
- Numerical examples to validate own software implementations of P-series Recommendations
- Numerical data sets (maps, tables) supplemental to P-series Recommendations
- https://www.itu.int/en/ITU-R/study-groups/rsg3/Pages/iono-tropo-spheric.aspx
- Intersessional work: CG 3M-4 – Chairman: Thomas PRECHTL (AUT)

# Participation welcomed by all ITU-R members

- Measurement data particularly welcome to advance new topics as described above
- Modelling efforts needed to form useful prediction methods from measurements
- Feedback welcome on appropriateness of prediction methods or other areas needed.
- Please refer to SG 3 website for more details:
- https://www.itu.int/en/ITU-R/study-groups/rsg3/Pages/dtbank-dbsg3.aspx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# Thank you!

Questions to brmail@itu.int or Carol.Wilson@csiro.au

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