

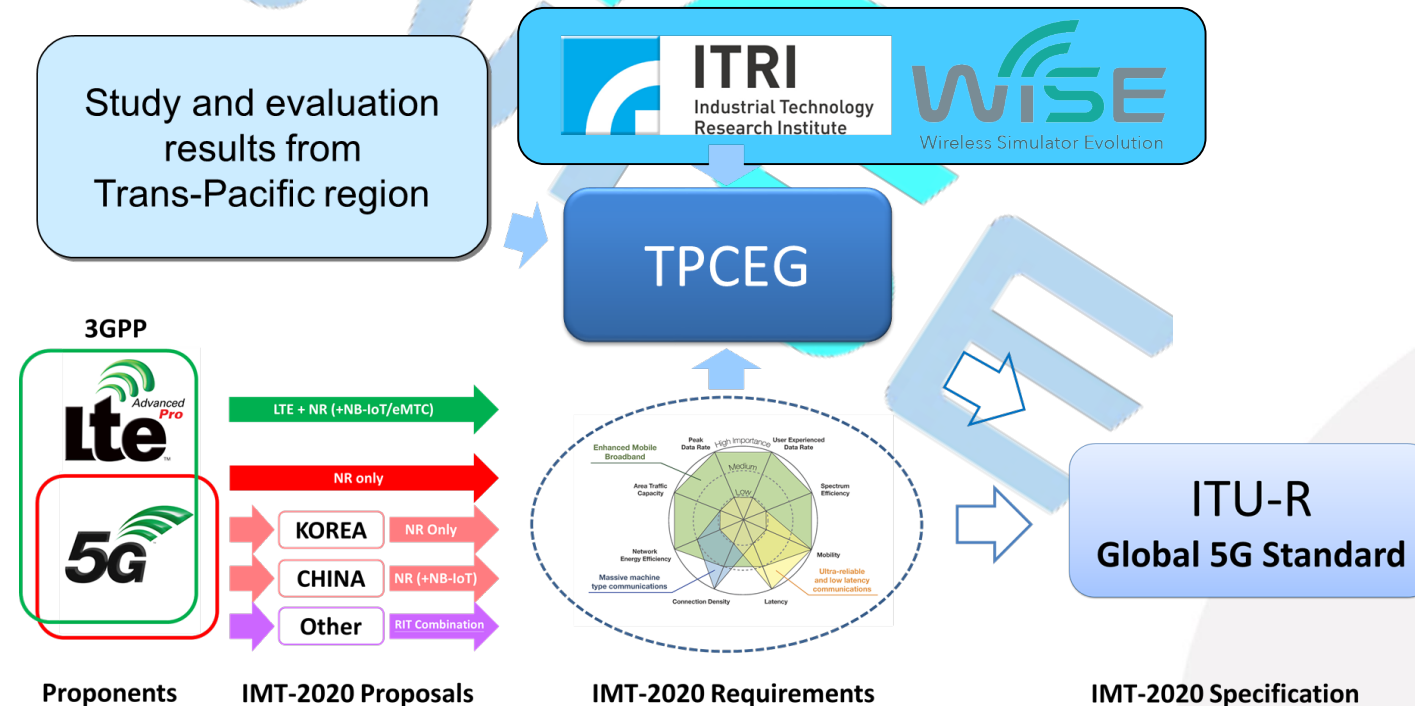
# Final Evaluation Results from Trans-Pacific Evaluation Group on the IMT-2020 Proposal

February 2020



# About Trans-Pacific Evaluation Group

- The Independent Evaluation Group is called **Trans-Pacific Evaluation Group (TPCEG)**.
- TPCEG was formed by ITRI Inc. (WiSE Simulator), and a registered Independent Evaluation Group (IEG) committing in participating in the process of IMT-2020 evaluation. The proponents of TPCEG coming from trans-pacific area, including Taiwan Association of Information and Communication Standards (TAICS) and other research units.



# Introduction and Background of TPCEG

- TPCEG is an international, non-profit, technology-neutral study group formed by ITRI as an independent evaluation group with the aim of analysing and evaluating IMT-2020 (S)RIT proposals.
- The mission is to promote growth of wireless broadband through collecting and disseminating information that increases public awareness of industry's products and services.
- The study group targets on:
  - Coordinating and sharing information and results with proponents and other evaluation groups.
  - Examining and verifying simulation results.
  - Preparing evaluation report for candidate (S)RITs.

# TPCEG Evaluation Summary – LTE RIT

	Performance Metrics	Requirements (downlink / uplink)	
1	Peak Data Rate	20 / 10	Gbit/s
2	Peak spectral efficiency	30 / 15	bit/s/Hz
3	User Experienced Data Rate	100 / 50	Mbit/s
4	5th percentile user spectral efficiency	0.3/0.21, 0.225/0.15, 0.12/0.045	bit/s/Hz/TRxP
5	Average spectral efficiency	9/6.75, 7.8/5.4, 3.3/1.6	bit/s/Hz/TRxP
6	Area Traffic Capacity	10 (lnH)	Mbit/s/m <sup>2</sup>
7	Connection density	1,000,000	Devices/km <sup>2</sup>

LTE with NB-IoT										
eMBB, lnH			eMBB, DeU		eMBB, RuI			mMTC UrM	uRLLC UrM	Check?
CFG A	CFG B	CFG C	CFG A	CFG B	CFG A	CFG B	CFG C			
21.568~28.4			2.688~13.5872							◎
43.2920~44.38			17.8426~21.2308							◎
			note	note						◎
0.19~0.34/ 0.19~0.25	-	-	0.23~0.3/ 0.36~0.49	-	0.27~0.32 / 0.29~0.3	0.29~0.32/ 0.15~0.17	0.27~0.33/ 0.23~0.25			◎
7~9.12/ 6.12~7.17	-	-	8.94~14.23/ 6.4~11.72	7.9~16.7/ 5.7~7.5	10.4~11.5 / 9.3~9.8	10~10.8 / 10.2~10.4	10~10.0 / 5.4~5.6			◎
note	-	-								◎
								>		◎

Note : with sufficient bandwidth

# TPCEG Evaluation Summary – NR RIT

	Performance Metrics	Requirements (downlink / uplink)	
1	Peak Data Rate	20 / 10	Gbit/s
2	Peak spectral efficiency	30 / 15	bit/s/Hz
3	User Experienced Data Rate	100 / 50	Mbit/s
4	5th percentile user spectral efficiency	0.3/0.21, 0.225/0.15, 0.12/0.045	bit/s/Hz/TRxP
5	Average spectral efficiency	9/6.75, 7.8/5.4, 3.3/1.6	bit/s/Hz/TRxP
6	Area Traffic Capacity	10 (lnH)	Mbit/s/m <sup>2</sup>
7	Reliability	1-10 <sup>-5</sup>	
8	Connection density	1,000,000	Devices/km <sup>2</sup>

NR only										
eMBB, lnH			eMBB, DeU		eMBB, Rul			mMTC UrM	uRLLC UrM	Check?
CFG A	CFG B	CFG C	CFG A	CFG B	CFG A	CFG B	CFG C			
38.42~174.76 / 4.27~40.5										◎
31.8~48.6 / 20.0~25.03										◎
			note	note						◎
0.31~0.48 / 0.19~0.48	0.4~0.78 / 0.19~0.4	0.39~0.84 / 0.12~0.47	0.38~0.51 / 0.29~0.49	0.02*0.04/ 0.015*0.025	0.12~0.53 / 0.07~0.55	0.41~0.53 / 0.09~0.53	0.26~0.55/ 0.09~0.46			◎
7.5~13 / 6~9.9	10.4~13.0 / 5.19~10.4	11.5~18.2 / 10.12~12.3	8.4~15.7/ 6.4~11.7	8.6~16.7/ 5.7~7.5	5~16.2/ 4.5~11.8	13.7~15.8 / 9.7~13.2	5.26~15.93/ 4~7.5			◎
note	note	note								◎
									>	◎
								>		◎

Note : with sufficient bandwidth

# IMT-2020 Evaluation Summary

Country	Evaluation Group	Evaluation Report	eMBB			mMTC	uRLLC	Full Evaluation?	Calibration	Remark
			Indoor Hotspot	Dense Urban	Rural	Urban Micro	Urban Micro			
	3GPP (Proponent)	IMT-2020/14 (self-evaluation)	⊙	⊙	⊙	⊙	⊙	YES	Baseline	(5 <sup>th</sup> S.E. evaluation is not aligned with M.2412)
EU	5G-IA	IMT-2020/33	⊙	○	⊙	⊙	⊙	YES	NR	Issue is confirmed (No data support)
USA	ATIS	IMT-2020/29	△	△	△	⊙	-		-	
CHN	ChEG	IMT-2020/10R1	⊙	○	⊙	⊙	⊙	Endorse 3GPP	Endorse 3GPP	
CAN	CEG	IMT-2020/30	△	△	△	△	-		-	
	WWRF	-	-	-	-	-	-		-	
IND	TCOE	IMT-2020/9R1	△	△	△	-	-		-	
JPN	5GMF	IMT-2020/32	△	△	△	⊙	△		-	
KR	TTA	IMT-2020/31	⊙	○	⊙	⊙	⊙	Endorse 3GPP	NR (KU)	
	TPCEG	IMT-2020/8R1	⊙	⊙	⊙	⊙	⊙	YES	LTE, NR	Comment is accepted (with data support)
IND	5GIF	IMT-2020/11R1	△	△	△	⊙	⊙		-	
NGI	AEG	IMT-2020/34	-	-	-	-	-		-	

**END**  
**Thank you**

