



LexisNexis®

IPlytics™

# Who is Leading the 5G Patent Race?

Tim Pohlmann, CEO at LexisNexis IPlytics

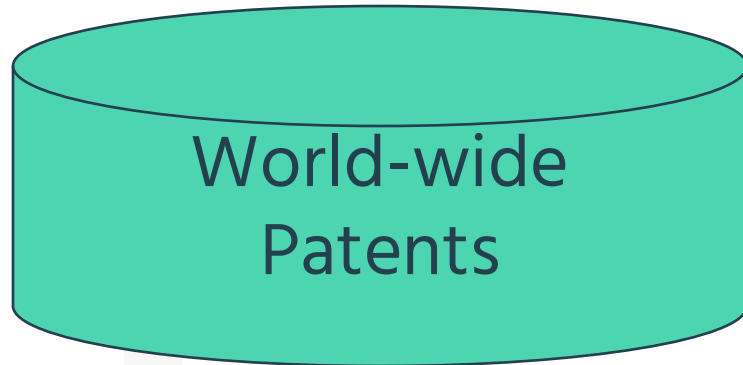
5. Oktober 2023

# How to identify 5G leaders?

---

- The 5G patent declaration data is based on self-declarations. ETSI does not filter or confirm essentiality, nor clean or update patents declared to the database.
- Some level of over-declaration is natural and in good faith, because ETSI requests patent owners to make timely declarations of any potential SEP even if the patent is yet pending and the standard not final.
- While ETSI patent declaration data has limitations, the data is a starting point to identify 5G leaders and is used as a reference point among others in 5G licensing negotiations.
- However, ETSI raw data is grossly inflated and requires accurate patent number normalization, rigorous cleaning and deduplication, family expansion, precise 5G classification and matching to correct patent ownership data and legal status data.

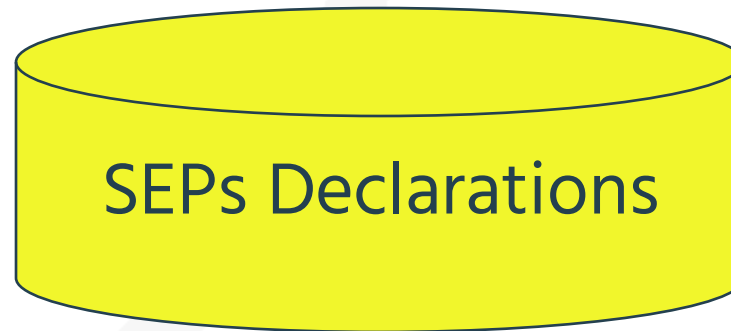
# Data Sources



EP1234567B2
Family Member
Active/Expired
Pending/Granted
Current Assignee
Inventor
Claim Number
Exp. 01.01.2024



TS 38.213 v15.4.0
Release 15
Group RAN1
Tech. Gen. 5G
18.04.2019
Section Number
Contributor
Author



EP1234567B2	TS 38.213 v15.4.0
Company Inc.	01.01.2020

# 5G Data Cleaning

## Match

### Declared number

WO2006KR03250

KR20020063942

HK20010104144

KR19980053228

KR19990054258

US20060420323

### Matched application number

WO2006KR3250A

KR200263942A

HK2001104144A

KR199853228A

KR199954258A

US2006420323A



Declared patent numbers are messy. >40% of the declared **numbers** must be **normalized** to match patent office data.

## Clean



Almost 20% of all declared patent numbers are ambiguous which makes it required to check and **clean out false positive**.

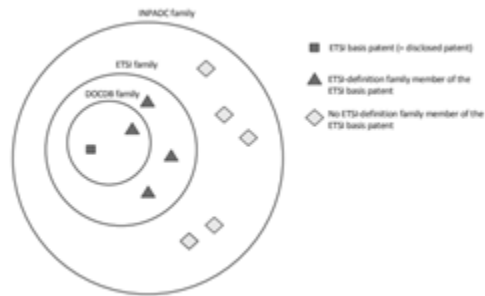
## Deduplicate

IPR Information Statement			
RD, TECHNICAL SPECIFICATION or ETR Work Item	Proprietor	Application No.	Publication No.
Work Item or StandNo.	Illustrative Specific part of the standard (e.g. Section)	Version (XXXX.X)	Patent
Specs			
TS 24.008			
TS 24.023			
TS 24.211			
TS 27.240			
TS 28.000			
TS 28.004			
TS 28.006			
TS 28.031			
TS 28.031			
TS 28.070			
TS 28.070			
TS 28.214			
TS 28.423			
TS 28.413			
TS 28.473			
TS 28.508			

Patents of the same family are declared multiple times which makes it required to **deduplicate** and count by family.

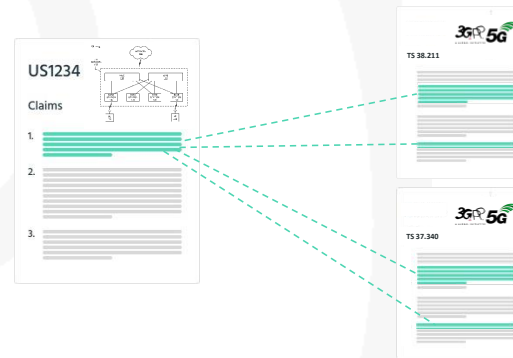
# 5G Data Processing

## Expanded



ETSI requires to declare one basis patent only which makes it required to **add family counterparts** from all jurisdictions.

## Classify



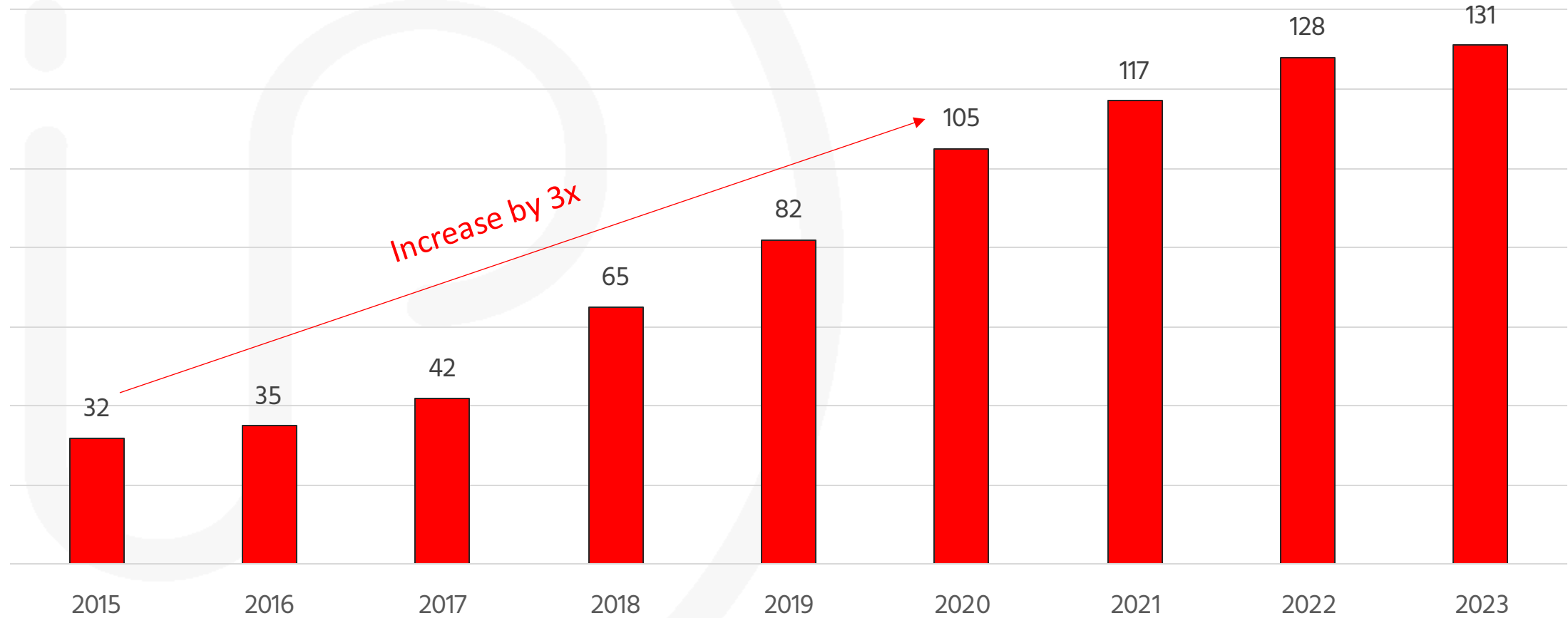
Patents are declared to ambiguous standard projects which makes it required to **classify** patents to distinct **standards generations** using TS.

## Enhanced

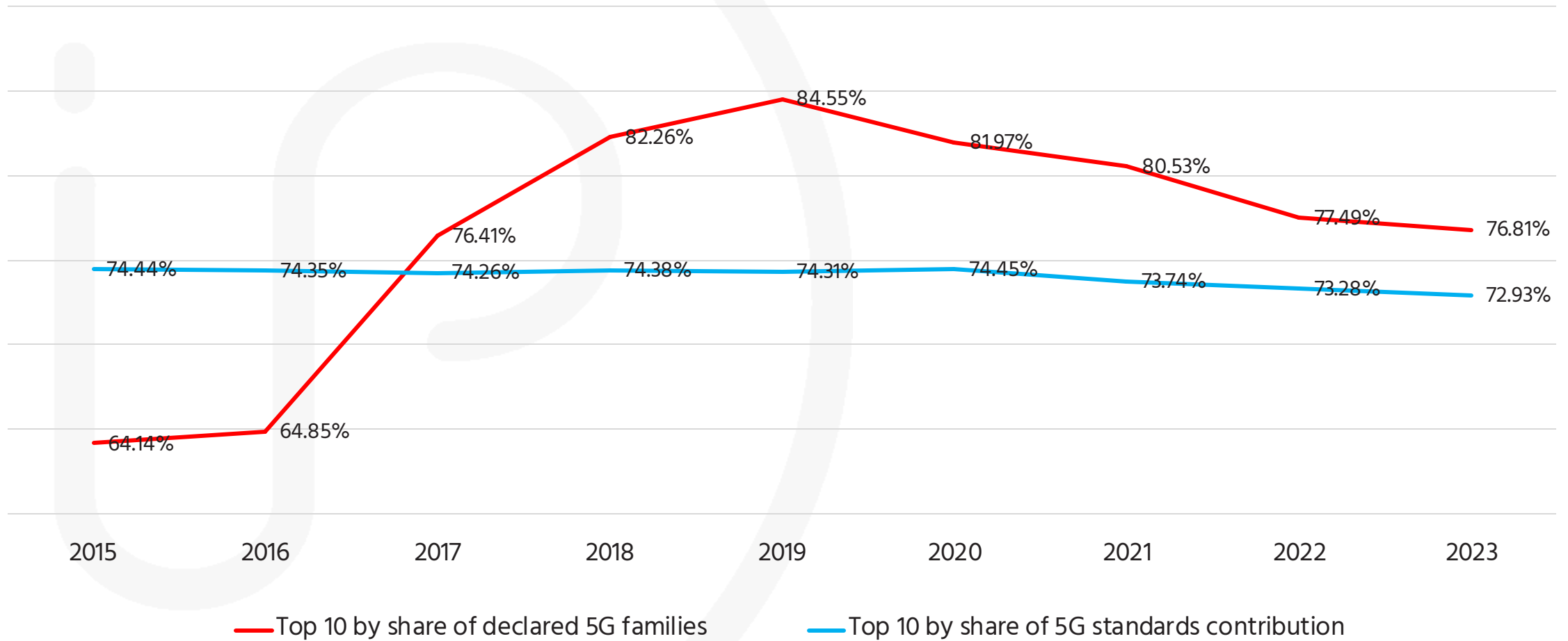


IPLYtics connects declared patents with accurate **ultimate patent owner data**, **legal status** and **patent family** information.

- Number of 5G patent family-owning companies with at least 2 granted and active EP or US declared patent families by year of declaration and year of patent family grant



➤ Patent family share of the top 10 SEP-owning companies by year of declaration and year of patent family grant (EP or US), by share of declared 5G families, by share of 5G standards contribution

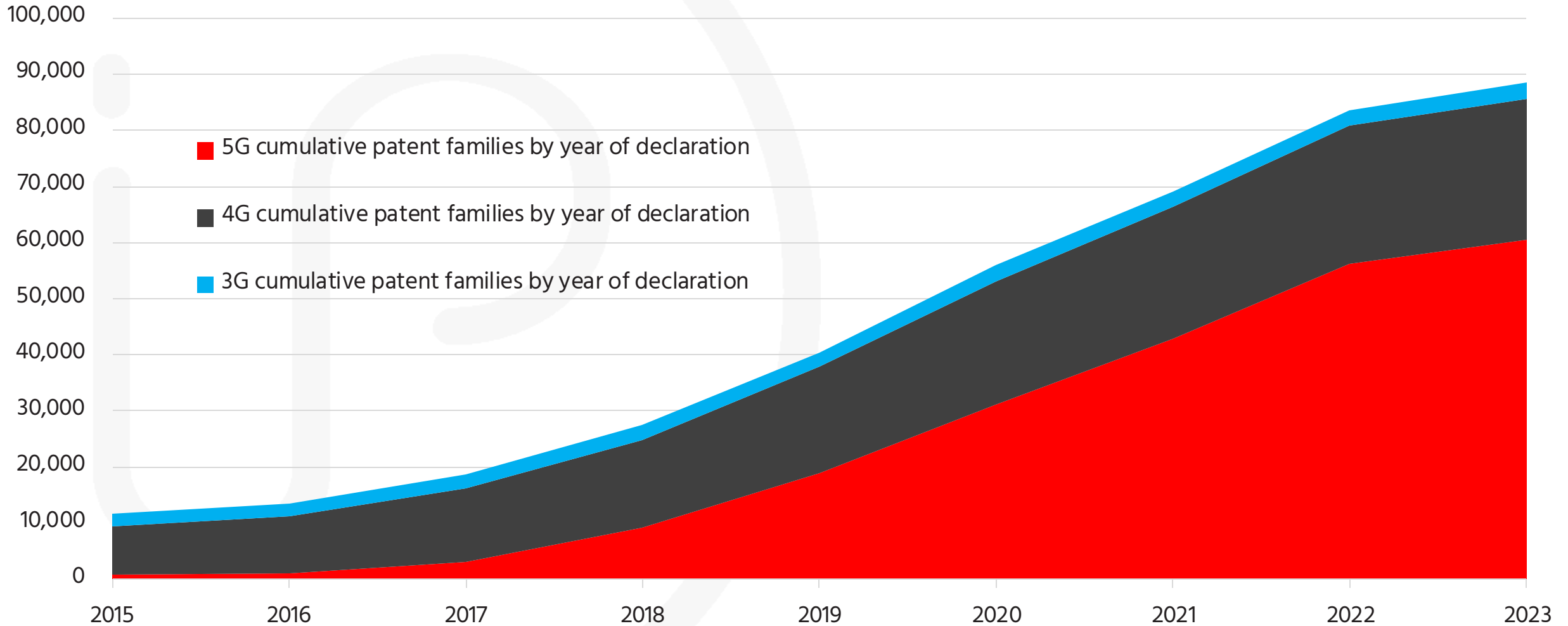


➤ Ranking of the top 10 5G patent family owners

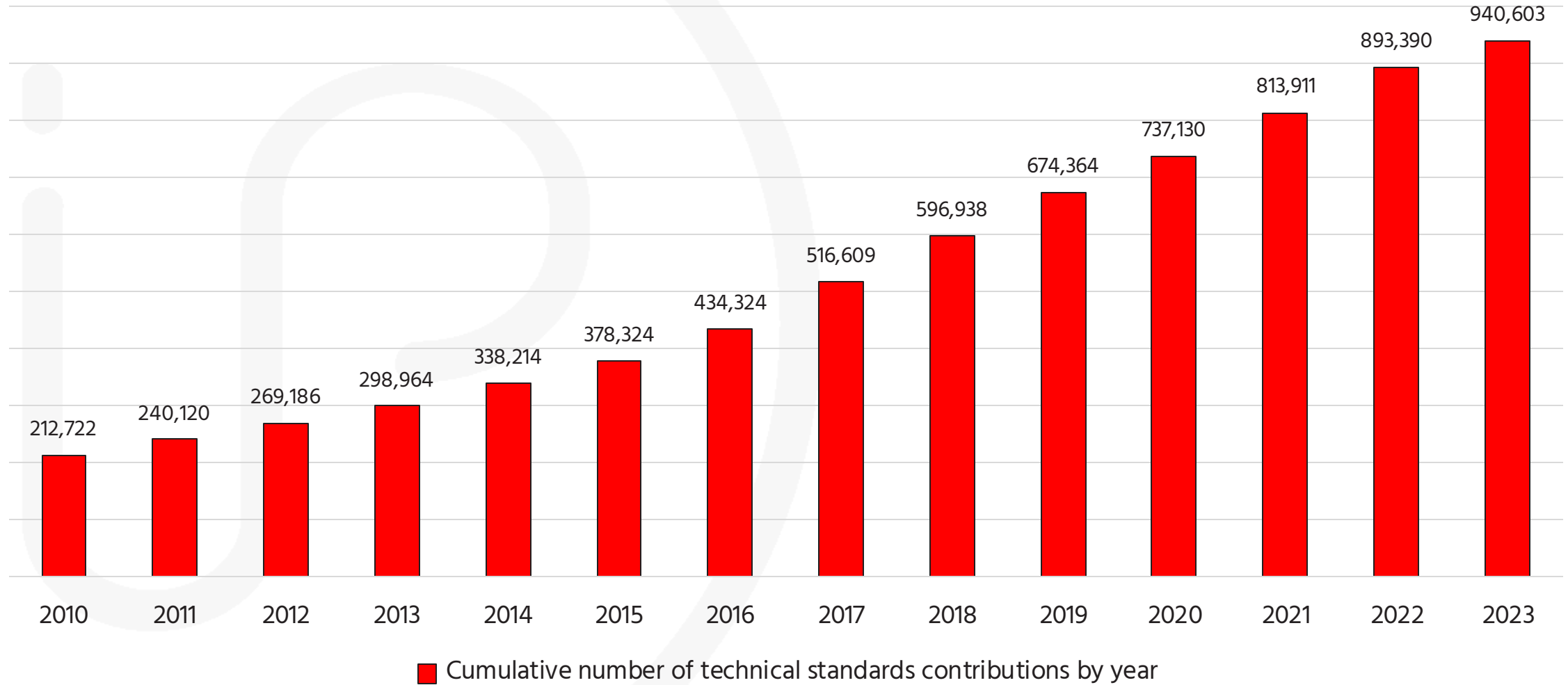
<b>Rank</b>	<b>Ultimate Owner</b>	<b>Rank of 5G families (active, granted in at least EP or US)</b>	<b>Rank of Patent Asset Index Weighted 5G families (active, granted in at least EP or US)</b>	<b>Rank of 5G relevant 3GPP contributions</b>
1	Huawei (CN)	1	3	1
2	Qualcomm (US)	2	1	4
3	Samsung (KR)	3	2	5
4	Ericsson (SE)	6	6	2
5	Nokia (FN)	5	7	3
6	LG Electronics (KR)	4	4	8
7	ZTE (CN)	7	8	6
8	Oppo (CN)	7	12	12
9	NTT DOCOMO (JP)	10	13	9
10	InterDigital (US)	14	5	15



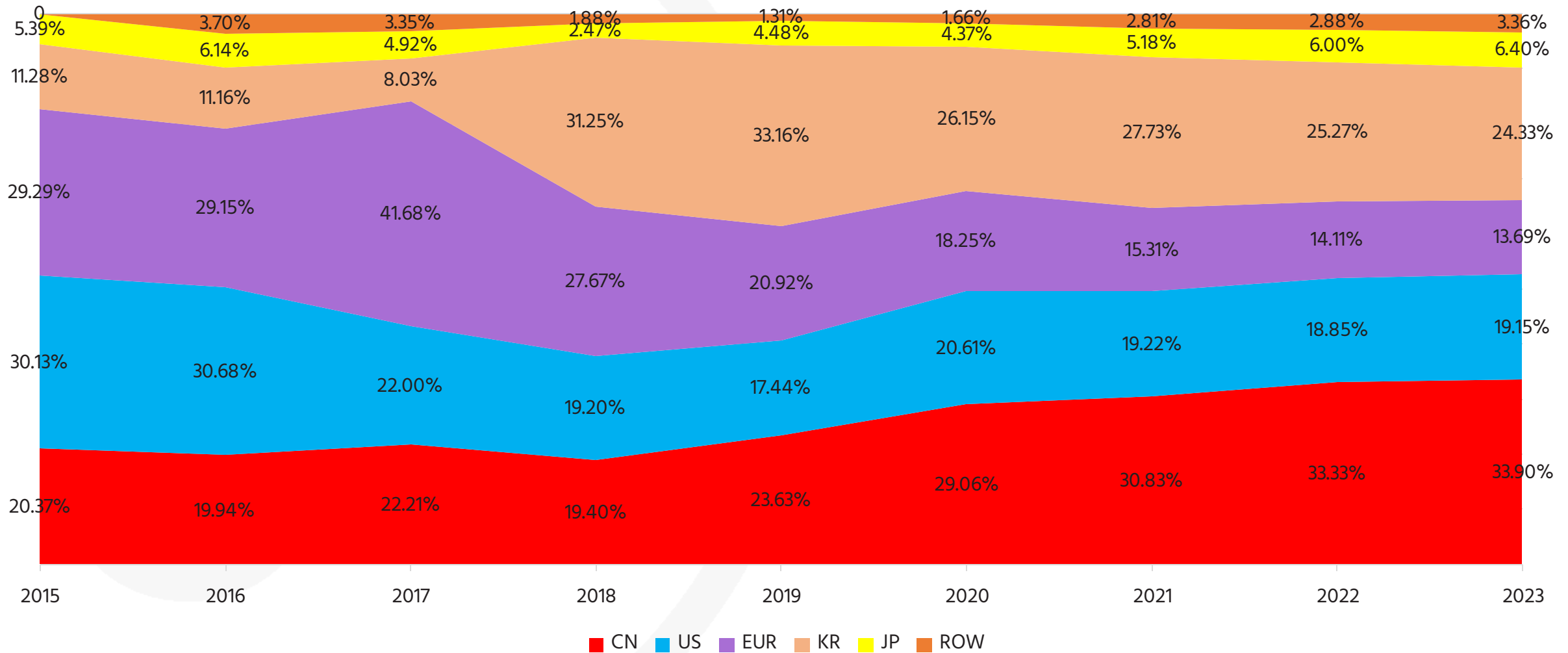
➤ Cumulative number of active (not lapsed nor expired) 3G, 4G and 5G declared patent families (both pending and granted) by year of declaration



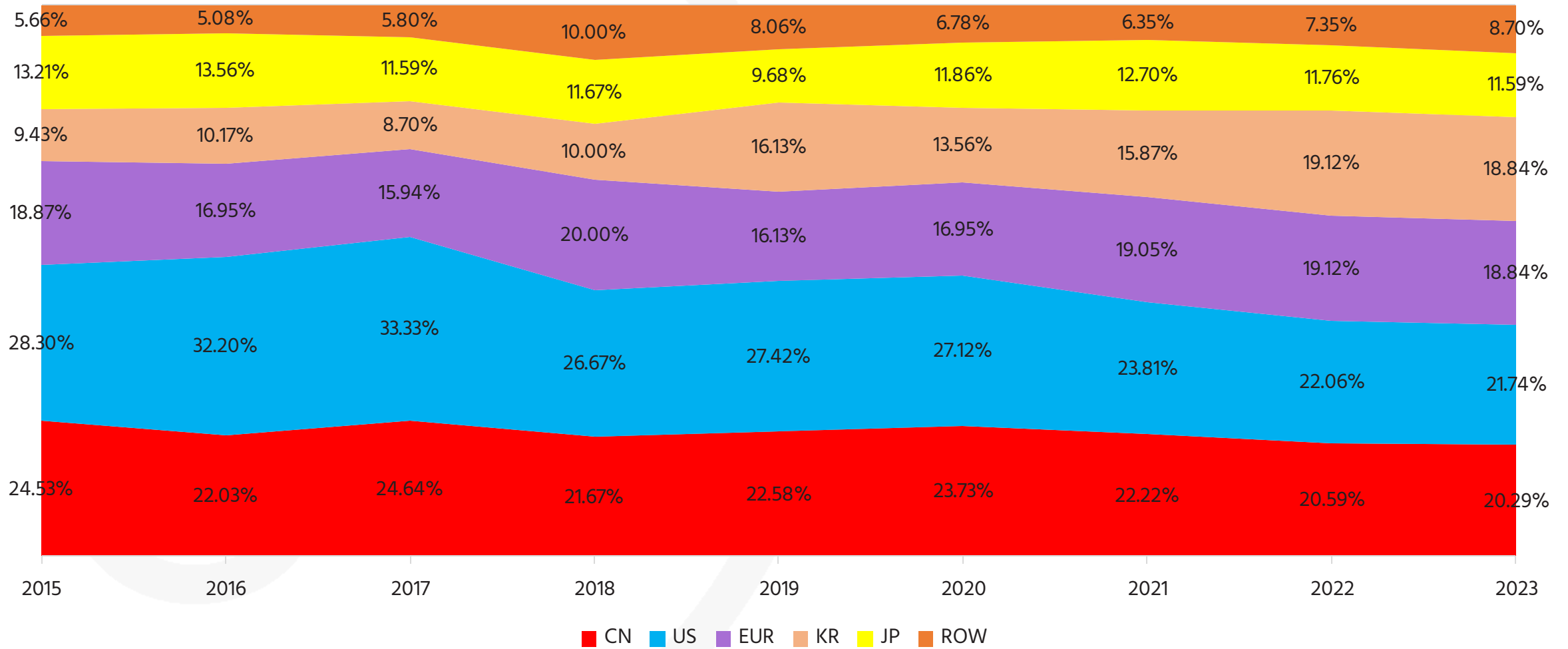
➤ Cumulative number of 5G related technical standards contributions over time



➤ 5G patent family (EP or US granted) share by the region of headquarter of 5G-owning companies



➤ Share of the number of 5G-owning companies (owning at least 10 EP or US-granted patent families) by the region of headquarter



- The 5G patent report 2023 will be published in September 2023.
- Sign up to be among the first to receive the full version at: [info@iptytics.com](mailto:info@iptytics.com)



For more information on Iplytics Products and Services, please contact us on:

<https://www.iplytics.com/request-a-demo/>



# Contact

---

Questions?

**LexisNexis IPlytics**

[info@iplytics.com](mailto:info@iplytics.com)

[www.iplytics.com](http://www.iplytics.com)