



# SEP Declarations and FRAND Licenses

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Orange

v.1.2, 13 June 2016

SEP Declarations and FRAND Licenses

Prepared by Serge RAES

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# Overview of declared SEP

[Interplay between Standards and IPR, Prof. Knut Blind, April 2011]

Standard	Patent family	Total patents	Standard	Patent family	Total patents	Standard	Patent family	Total patents
ETSI-UMTS	1605	2864	ETSI-GERAN	26	44	ETSI-HSPA+	11	12
ETSI-GSM	756	1333	IEEE 802.3 Ethernet	26	35	ETSI-MMB	11	16
<b>ETSI-LTE</b>	<b>562</b>	<b>866</b>	ETSI-GMR	23	31	ETSI-Speech Recognition	11	15
OMA (all)	266	408	IEC 65C Industrial networks	23	24	ITU-T G.991.1(HDSL)	11	20
<b>IETF (all)</b>	<b>197</b>	<b>271</b>	JTC 1/SC 29/WG 1	23	27	J 144 Objective video quality for CATV	11	11
IEEE 802.16 (WiMax)	105	165	ITU-H.262 MPEG-2 Video	20	25	IEEE 802.21 Media Independent Handover	10	20
IEEE 802.11 (WiFi)	98	136	ETSI-BRAN	19	31	ITU G 729 speech Coding at 8 kbit/s (for VoIP)	10	12
ETSI-SAE	87	92	ETSI-DECT	18	20	ITU JPEG XR image coding system (T JXR-2; T JXR-5)	10	16
JTC RFID	78	143	IEEE 802.1 series	17	32	ITU V.90 modem 56 kbps	9	11
ITU other G series	52	69	ITU G 723.1 voice codec	17	19	ITU G.992.3 (ADSL2)	8	12
ETSI-DBV	51	92	ITU G.993.2 (VDSL2)	16	20	IEEE 1149.4 Mixed-Signal Test Bus	7	15
JTC 1/SC 29/WG 11 MPEG	45	68	JTC 1/SC 29	15	17	IEEE 802.3af PoE	7	15
IEEE 1363 Public Key Cryptography	43	52	ITU G.VBR-EV	14	14	ITU H.222.0 MPEG-2/System	7	10
ITU H.264/MPEG-4 AVC	43	86	BroadBand Forum	13	36	IEEE 1647 e-Functional Verification Language	6	10
ETSI-TETRA	40	53	ETSI-GMPRS	13	21	J 161 Audio/Video codec CATV	5	11
IEEE 1394 Firewire	30	46	ETSI-UICC	13	28	ETSI-DTS	4	10
JTC 1/SC 25	30	36	ISO TC 23/SC 19	12	14	ETSI-ERM	3	11
						ETSI-eCall	2	10

# Case study: 3GPP LTE declared Essential Patents

[<http://ipr.etsi.org/DynamicReportingResult.aspx>, 10/06/2016]

ETSI Projects	Standards	Companies	Patent Offices	Patent Holders	Patent Families	Declarations	IPR Disclosures
<b>11</b>	<b>5094</b>	<b>116</b>	<b>99</b>	<b>92269</b>	<b>9849</b>	<b>1007</b>	<b>16942</b>
<b>3GPP</b>	3567	110	98	61630	6571	811	12090
<b>3GPP-EUTRAN</b>	821	34	71	19776	2562	212	3017
<b>3GPP-Release-8</b>	1015	47	58	13582	1289	193	1410
<b>3GPP-Release-9</b>	523	39	58	5688	607	139	590
<b>3GPP-Release-10</b>	1014	48	67	20547	1921	306	2520
<b>3GPP-Release-11</b>	543	35	49	11174	936	205	1074
<b>3GPP-Release-12</b>	174	18	65	5667	1054	38	2278
<b>3GPP-Release-13</b>	132	42	77	23484	1931	181	3301
<b>3GPP-CT</b>	40	17	58	1955	174	79	314
<b>3GPP-SA</b>	674	50	76	11791	1584	257	3520
<b>LTE</b>	338	9	25	2667	181	17	443

# Analysis of the 3GPP LTE SEP Declarations

- **60% of the Declarations were made to 3GPP LTE**
  - **63% of the Standards to which SEP are being declared in the ETSI IPR DataBase are for 3GPP LTE**
  - **54% of the Declarant Companies have made a SEP Declaration to 3GPP**
  - **57% of the Patent Families are declared as Essential to 3GPP standards**
- 3GPP LTE is by far the world-largest projet in terms of number of POTENTIAL Standard Essential Patents subject to a voluntary FRAND licensing commitment**

# LTE declared Essential Patents Holders (1-40)

[<http://ipr.etsi.org/DynamicReportingResult.aspx>, 9/06/2016]

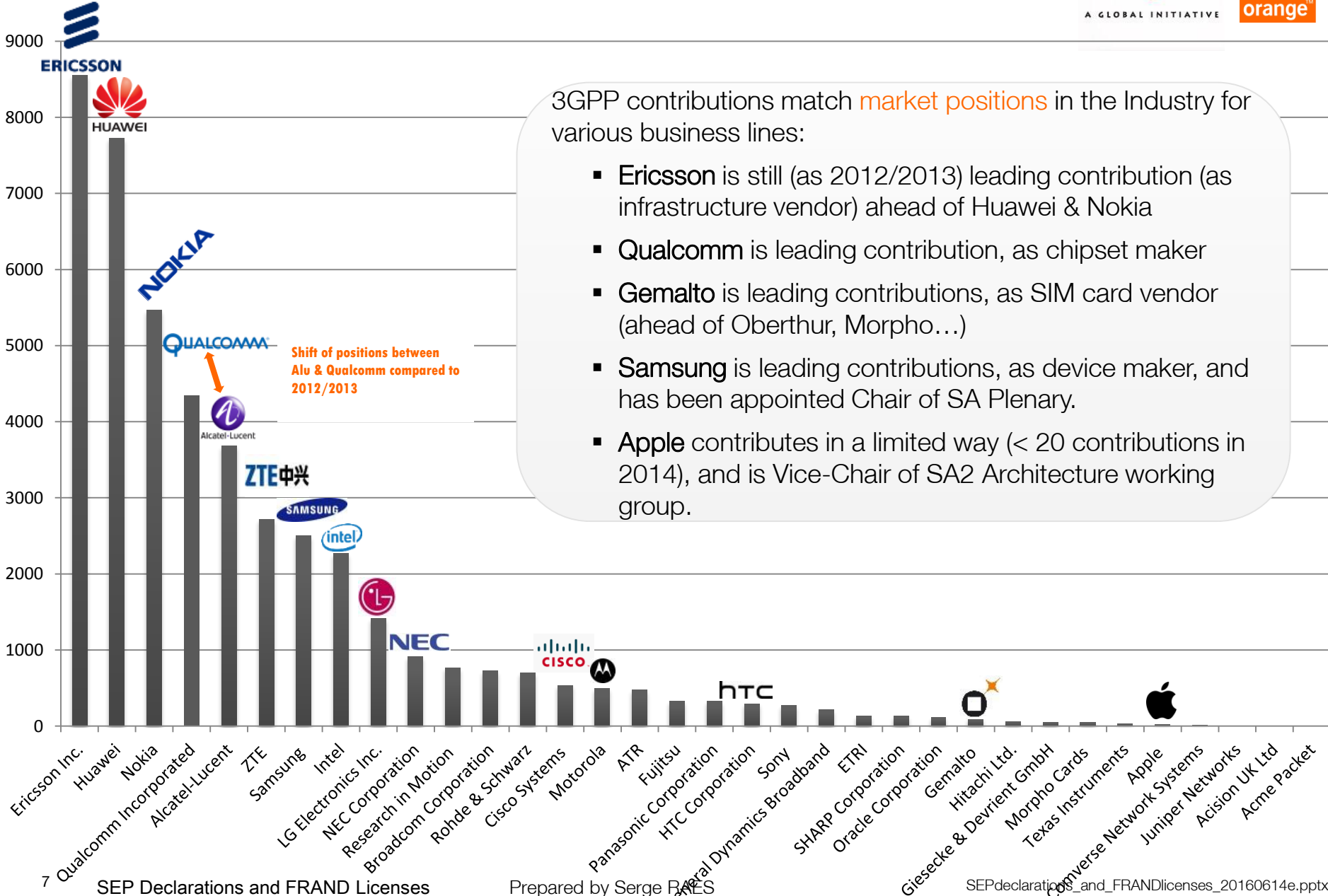
1-10	11-20	21-30	31-40
LG Electronics	Siemens	ETRI	Pantech
Qualcomm	NEC	Alcatel-Lucent	Deutsche Telekom
InterDigital	NTT DoCoMo	Sony	VirnetX
Motorola	Intel	HTC	KPN
Nokia	Panasonic	TI	Mitsubishi
Samsung	Sharp	Philips	Unwired Planet
Apple	Huawei	Optis	MediaTek
Ericsson	Kyocera	Innovative Sonic	Renesas
Coding Technologies	Nortel	IPR Licensing	Thomson
BlackBerry	Orange	General Dynamics	KT

**36 declarants in 2011 < 88 in 2013 < 104 in 2014 < 116 in 2016**



# Contributions to 3GPP LTE standardization and SEP Declarations: detailed results for year 2014 from Manufacturers and Operators perspective

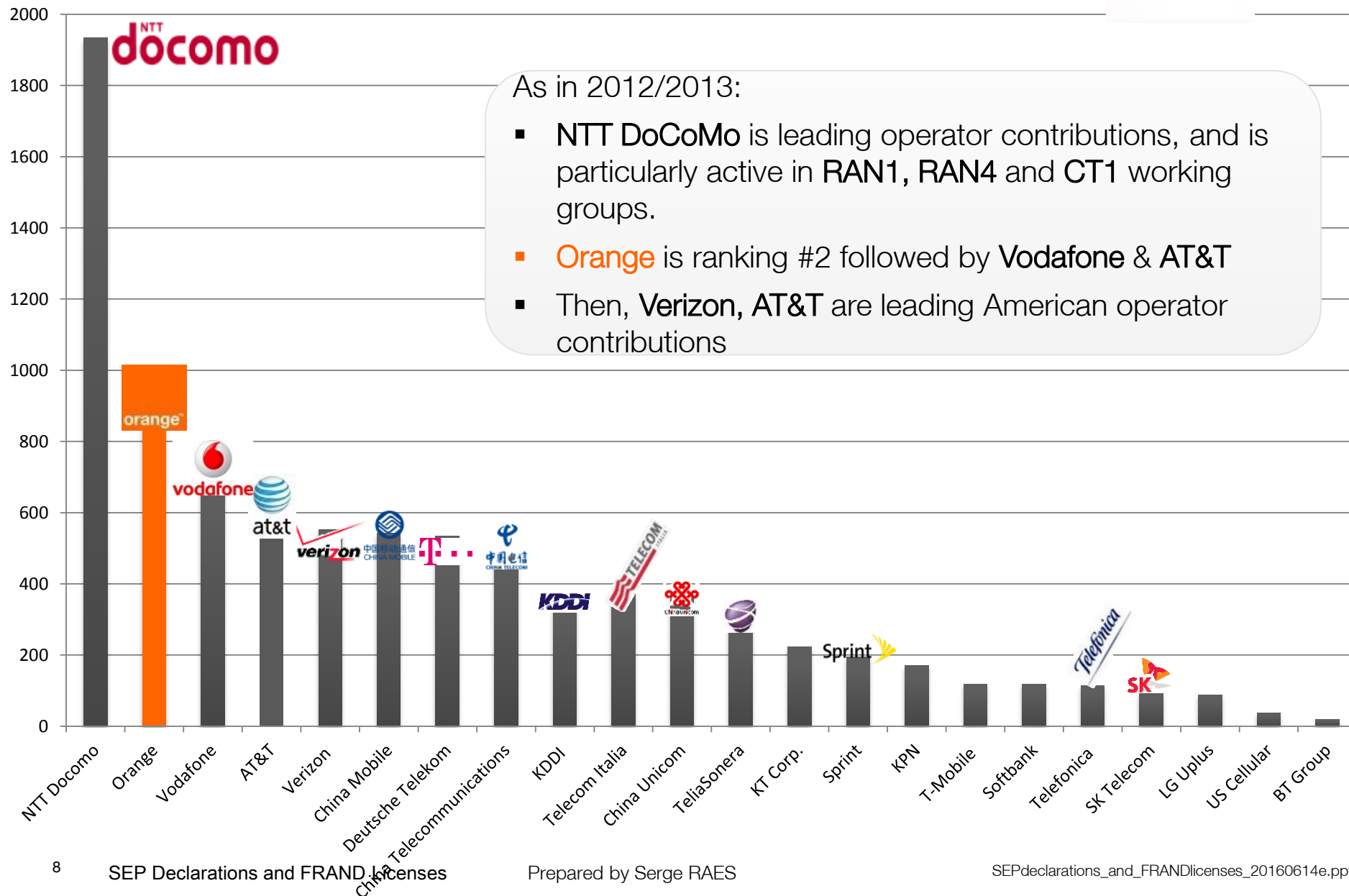
# Manufacturers contributions in 2014



3GPP contributions match market positions in the Industry for various business lines:

- Ericsson is still (as 2012/2013) leading contribution (as infrastructure vendor) ahead of Huawei & Nokia
- Qualcomm is leading contribution, as chipset maker
- Gemalto is leading contributions, as SIM card vendor (ahead of Oberthur, Morpho...)
- Samsung is leading contributions, as device maker, and has been appointed Chair of SA Plenary.
- Apple contributes in a limited way (< 20 contributions in 2014), and is Vice-Chair of SA2 Architecture working group.

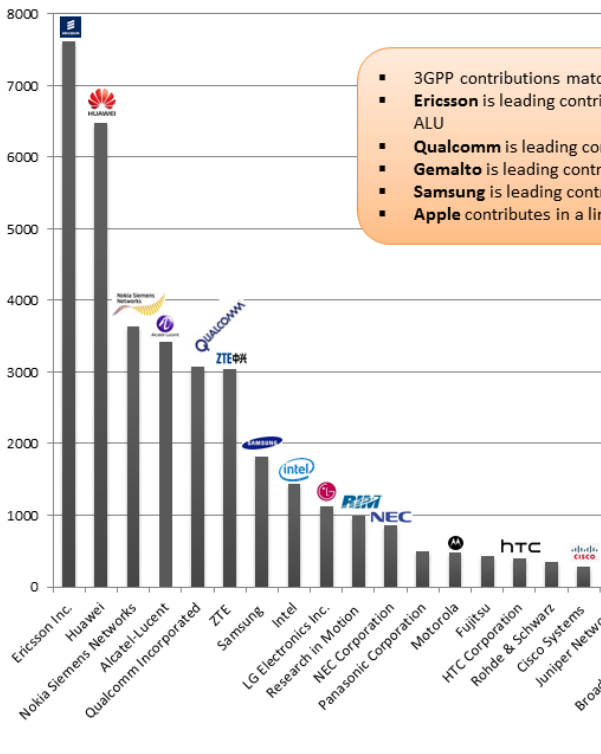
# Operators contributions in 2014





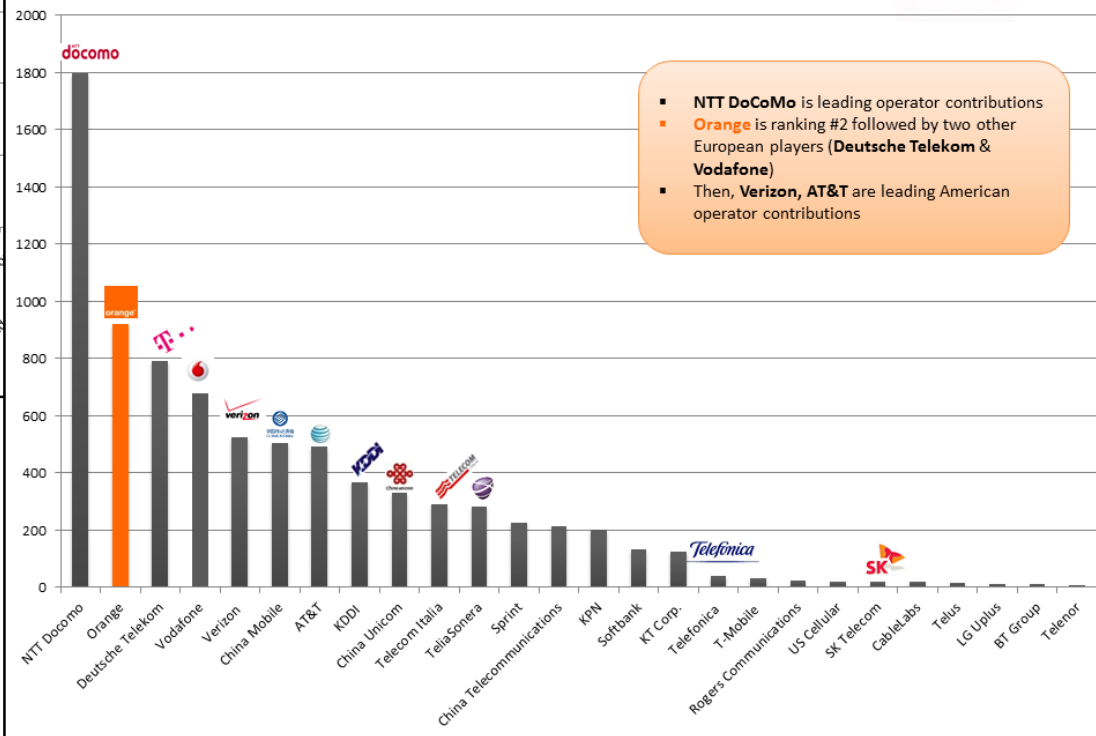
# Reminder: 2012 contribution figures

## Manufacturers contributions in 2012



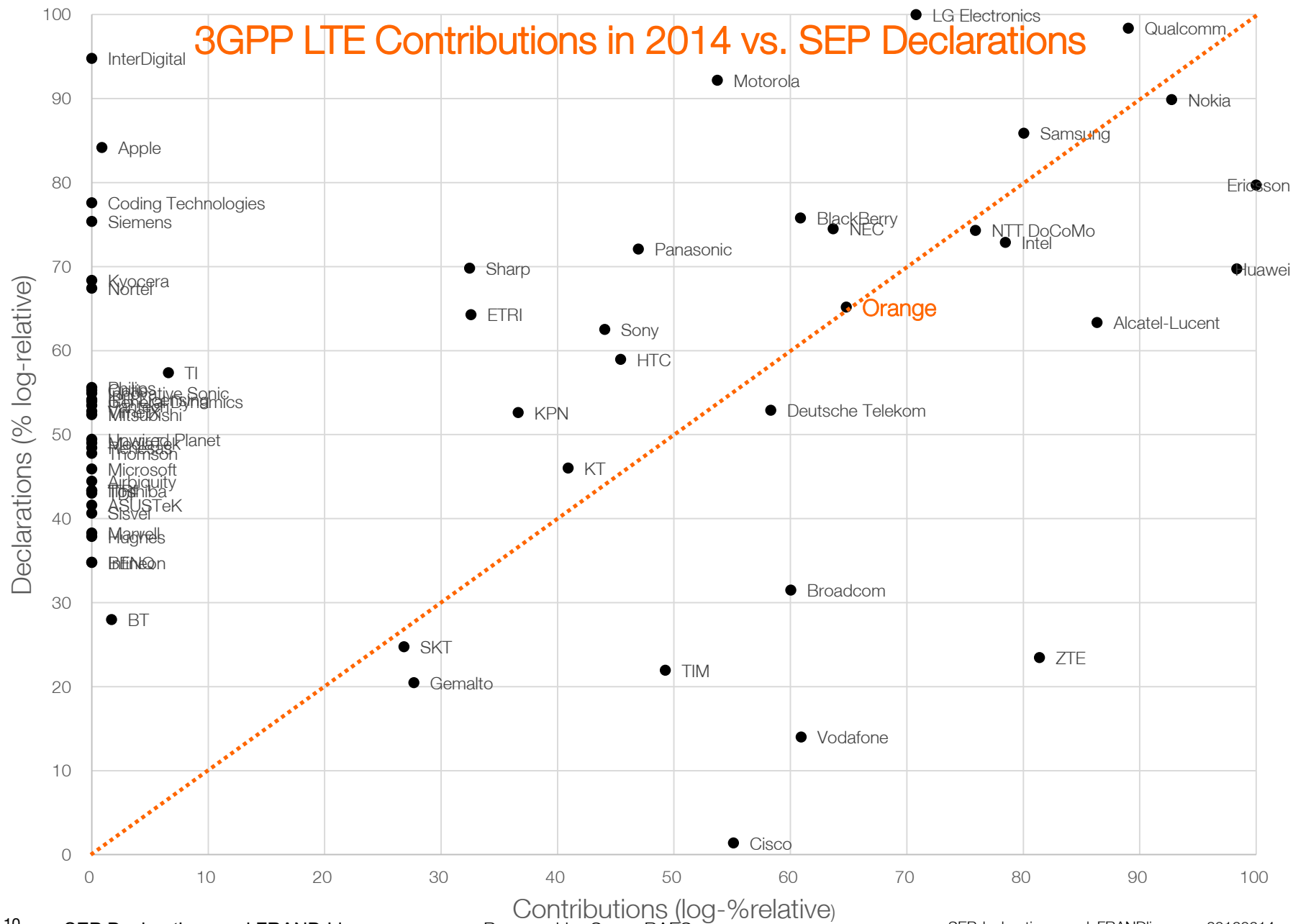
- 3GPP contributions match market positions in the Industry for various business lines:
- **Ericsson** is leading contribution (as infrastructure vendor) ahead of Huawei, NSN & ALU
- **Qualcomm** is leading contribution, as chipset maker
- **Gemalto** is leading contributions, as SIM card vendor (ahead of Oberthur, Morpho...)
- **Samsung** is leading contributions, as device maker
- **Apple** contributes in a limited way (#10 contributions)

## Operators contributions in 2012

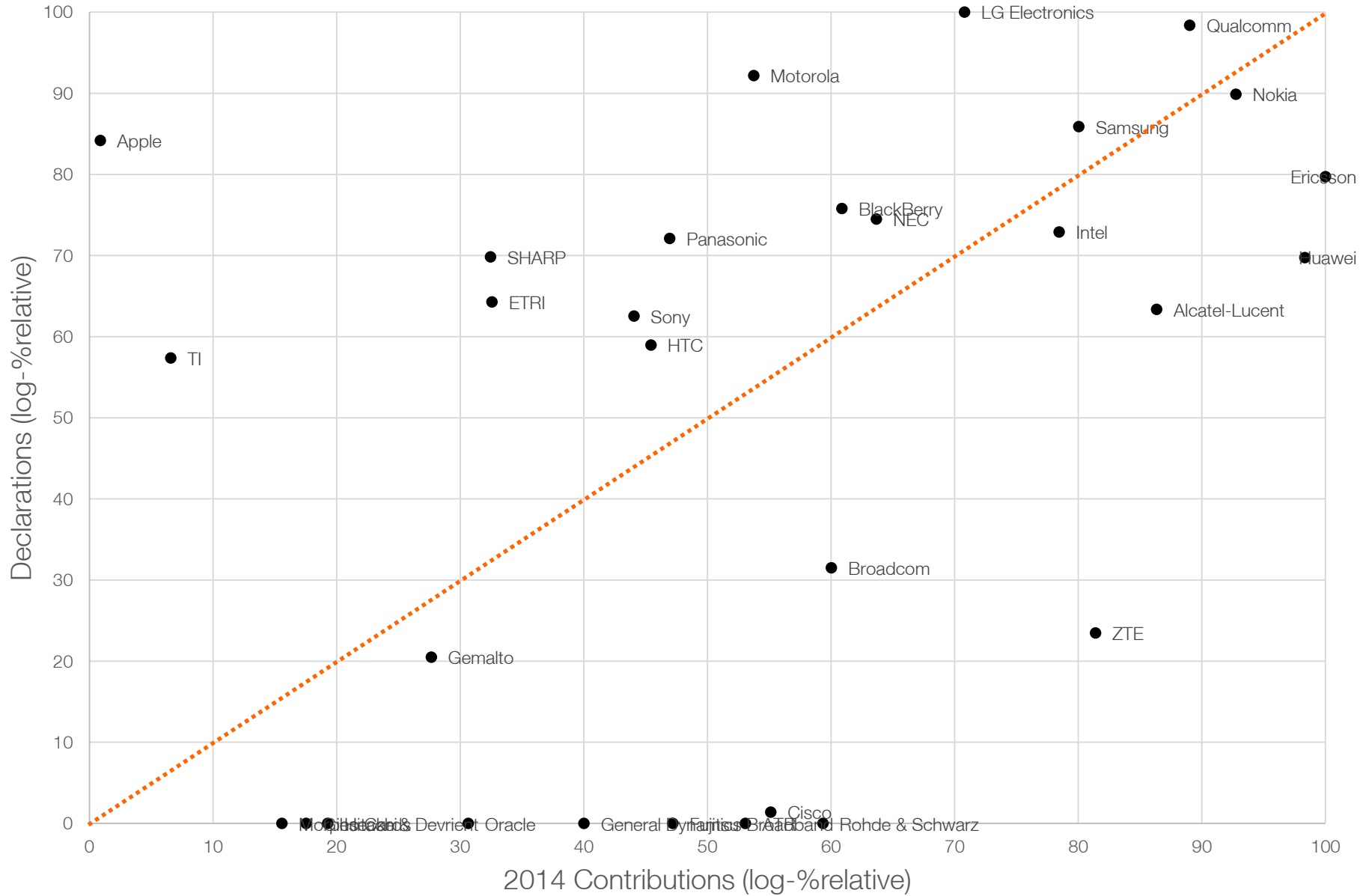


- **NTT DoCoMo** is leading operator contributions
- **Orange** is ranking #2 followed by two other European players (**Deutsche Telekom & Vodafone**)
- Then, **Verizon, AT&T** are leading American operator contributions

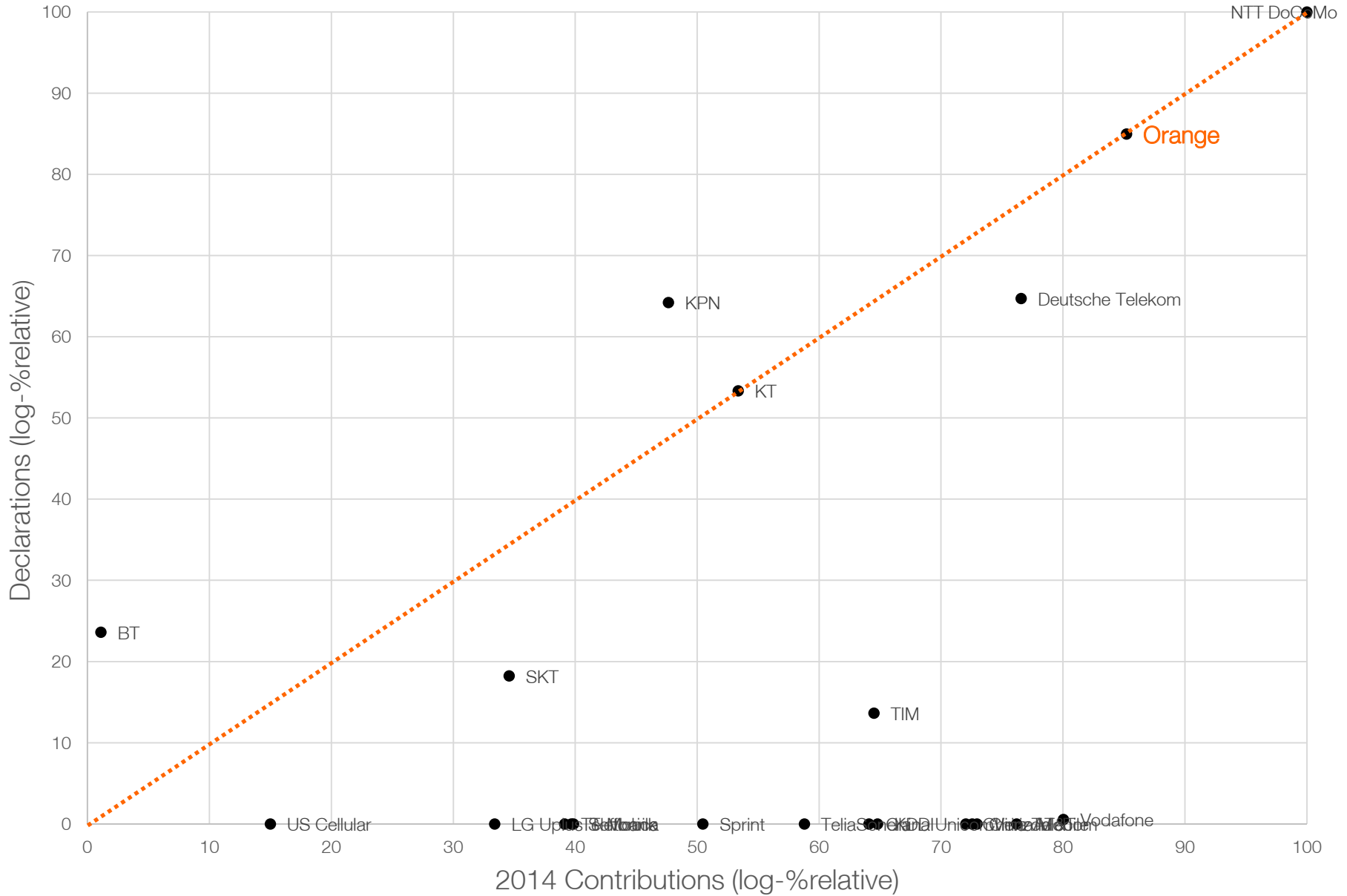
# 3GPP LTE Contributions in 2014 vs. SEP Declarations



# Focus on 3GPP LTE Manufacturers



# Focus on 3GPP LTE Operators



# FRAND encumbered SEP licensing practices

- **Direct licensing** 1:N
  - N licenses (no reciprocal license required)
- **Cross-licensing** N:N
  - $\frac{1}{2} \times N \times (N-1) = \frac{1}{2} \times (N^2 - N)$  licenses required
- **Collective licensing** M:N
  - Joint License Agreement M:N
    - N licenses required
  - Patent Pool 1:N
    - N licenses required from Patent Pool comprising M Licensors

**36 companies  $\leq$  630 licenses**  
**88 companies  $\leq$  3828 licenses**  
**104 companies  $\leq$  5356 licenses**  
**116 companies  $\leq$  6670 licenses**

# Thank You

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