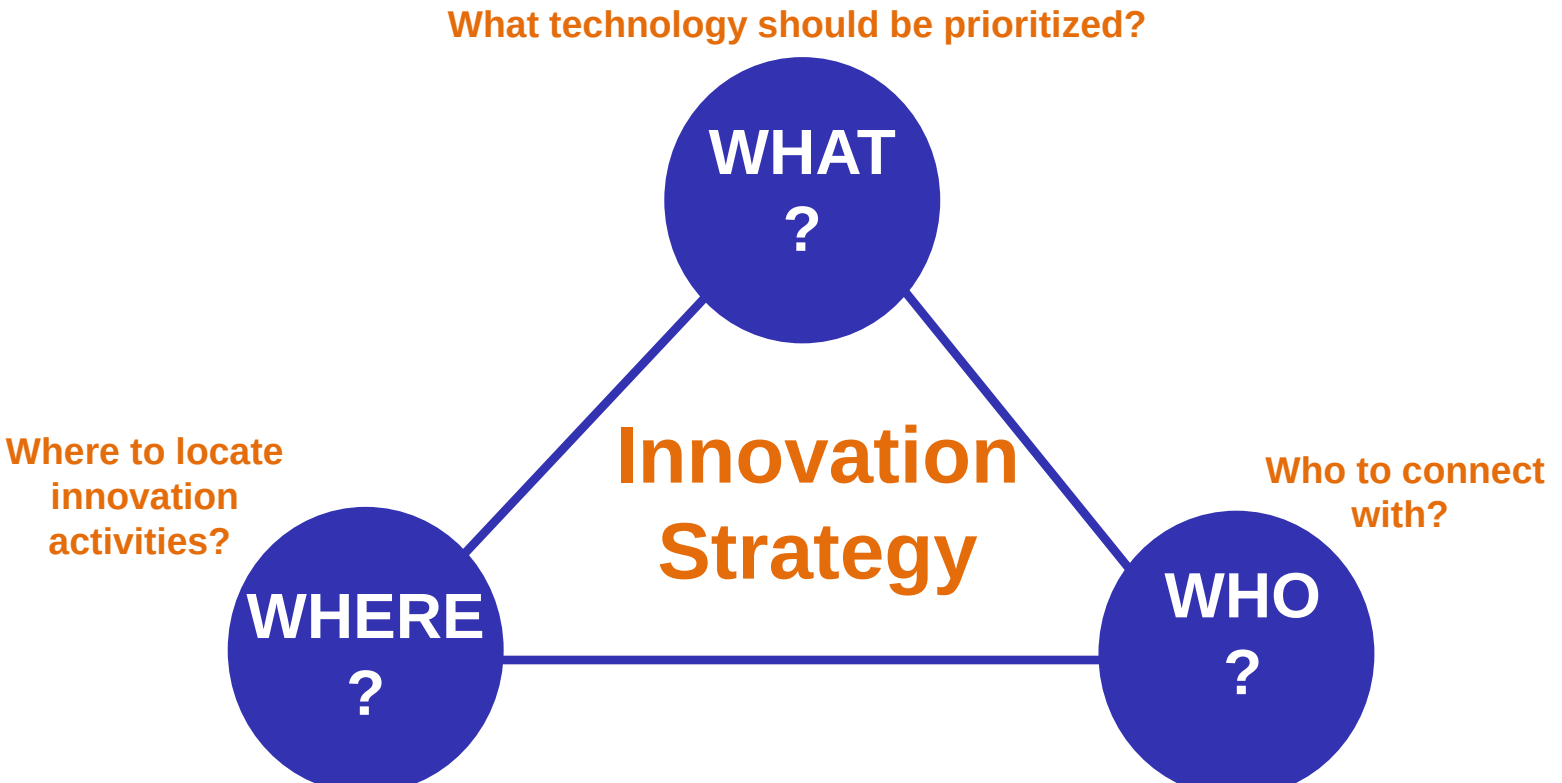
ECO-SYSTEMS MAPPING

ARGOS
STRATEGY GROUP

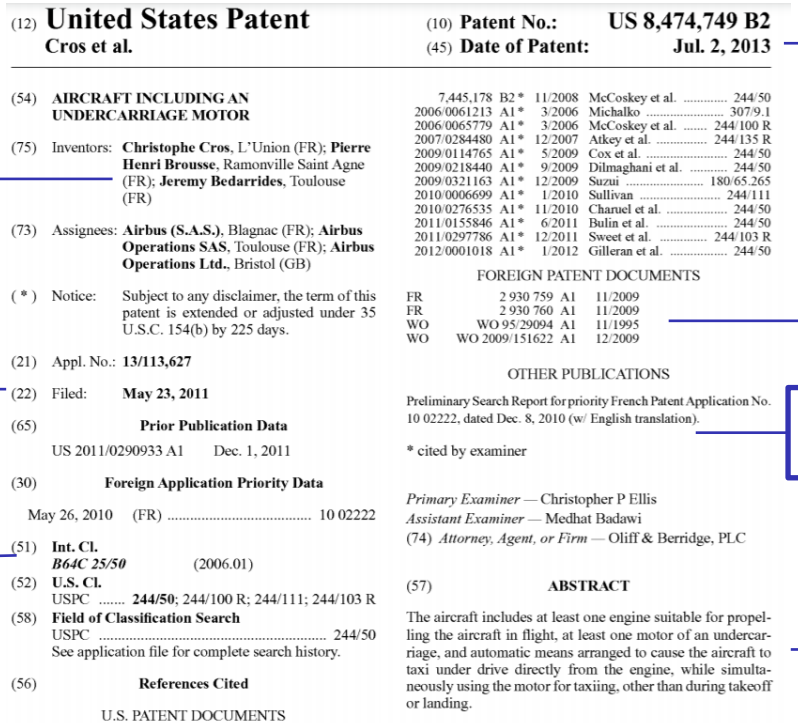
The three pillars of corporate innovation strategy



From strategic challenges to data solutions

	WHAT?	WHERE?	WHO?
Strategic challenge	What technology should be prioritized?	Where to locate innovation activities?	Who to connect with?
Level of analysis	Technological ecosystems	Urban ecosystems	Actor ecosystems
Key metrics	Classification Velocity Relatedness	Patent counts Relatedness density Comp. Advantages	Patent counts Patent shares
Business decisions	R&D investments Tech diversification New use cases	Spatial scouting Set-up incubators Locate R&D labs	Collaborations M&As Talent acquisitions

Analysis of large patent datasets



(12) **United States Patent**
Cros et al.

(10) **Patent No.: US 8,474,749 B2**
(45) **Date of Patent: Jul. 2, 2013**

(54) **AIRCRAFT INCLUDING AN UNDERCARRIAGE MOTOR**

(75) Inventors: **Christophe Cros**, L'Union (FR); **Pierre Henri Brousse**, Ramonville Saint Agne (FR); **Jeremy Bedarrides**, Toulouse (FR)

(73) Assignees: **Airbus (S.A.S.)**, Blagnac (FR); **Airbus Operations SAS**, Toulouse (FR); **Airbus Operations Ltd.**, Bristol (GB)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 225 days.

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(30) **Foreign Application Priority Data**

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B64C 25/50 (2006.01)

(52) **U.S. Cl.**
USPC ..... **244/50**; 244/100 R; 244/111; 244/103 R

(58) **Field of Classification Search**
USPC 244/50
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

7,445,178	B2 *	11/2008	McCoskey et al.	244/50
2006/0061213	A1 *	3/2006	Michalko	307/9.1
2006/0065779	A1 *	3/2006	McCoskey et al.	244/100 R
2007/0284480	A1 *	12/2007	Atkey et al.	244/135 R
2009/0114765	A1 *	5/2009	Cox et al.	244/50
2009/0218440	A1 *	9/2009	Dilmaghani et al.	244/50
2009/0321163	A1 *	12/2009	Suzui	180/65.265
2010/0006699	A1 *	1/2010	Sullivan	244/111
2010/0276535	A1 *	11/2010	Charuel et al.	244/50
2011/0155846	A1 *	6/2011	Bulin et al.	244/50
2011/0297786	A1 *	12/2011	Sweet et al.	244/103 R
2012/0001018	A1 *	1/2012	Gilleran et al.	244/50

FOREIGN PATENT DOCUMENTS

FR	2 930 759	A1	11/2009
FR	2 930 760	A1	11/2009
WO	WO 95/29094	A1	11/1995
WO	WO 2009/151622	A1	12/2009

OTHER PUBLICATIONS

Preliminary Search Report for priority French Patent Application No. 10 02222, dated Dec. 8, 2010 (w/ English translation).

* cited by examiner

Primary Examiner — Christopher P Ellis
Assistant Examiner — Medhat Badawi
(74) *Attorney, Agent, or Firm* — Oliff & Berridge, PLC

(57) **ABSTRACT**

The aircraft includes at least one engine suitable for propelling the aircraft in flight, at least one motor of an undercarriage, and automatic means arranged to cause the aircraft to taxi under drive directly from the engine, while simultaneously using the motor for taxiing, other than during takeoff or landing.

Precise geolocation of the place of knowledge production based on inventors home adresses

Application date

Specific classification in one of the 250,000 different technological category

Publication date

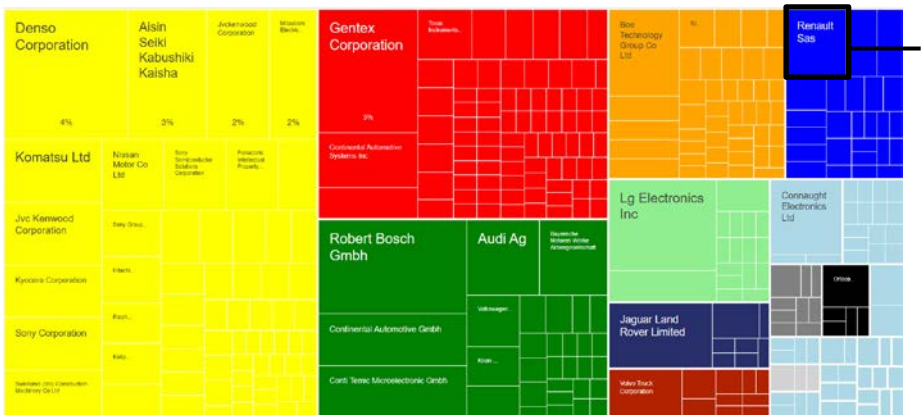
Citations to other patents

Citation to non-patent literature (scientific publications, reports)

Summary + complete text

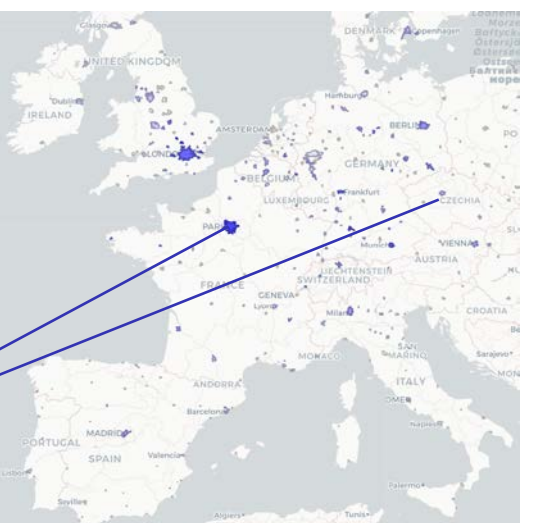
High-end interactive data visualizations tools

Key information for strategy decision making are made available through high-end interactive data visualizations tools (HTML). Links to the interactive material are launched by



Share of patents produced by a given company/inventor – top candidates for strategic collaborations & hiring

Urban ecosystems with the highest relatedness density, relative comparative advantage and patent counts – top candidates for location choices



Technological landscape

Classification of patents in strategic domains

We use a text mining algorithm to identify the patents that corresponds to the 8 strategic domains of head-up displays, computer-aided design, optical systems (general), holography, screen displays (vehicules), optical components, arrangement for software engineering & Automotive ECUs.

First, domain experts & Argos delineate the technological landscape and set up a **list of key words that characterize the different strategic domains.**

Second, a **text mining algorithm** searches these key words and their specific association in the text of **patent documents** as well as in the **Cooperative Patent Classification (CPC) nomenclature.** The CPC nomenclature is developed and maintained by the European Patent Office (EPO) and the US Patent and Trademark Office.

The algorithm returns a list the specific technological classes are most frequently associated with these key words. For 'Screen displays (vehicules)' for instance, the algorithm returns the class B60K2370/152.

In a third step, all the **CPC classes associated by the algorithm with the 8 strategic domains are manually checked** by Continental experts & Argos.

(12) NACH DEM VERTRAG ÜBER DIE INTERNATIONALE ZUSAMMENARBEIT AUF DEM GEBIET DES PATENTWESENS (PCT) VERÖFFENTLICHTE INTERNATIONALE ANMELDUNG

(19) Weltorganisation für geistiges Eigentum
Internationales Büro

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WIPO | PCT

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(25) Einreichungssprache: Deutsch

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(71) Anmelder: CONTINENTAL AUTOMOTIVE GMBH [DE/DE]; Vahrenwalder Straße 9, 30165 Hannover (DE).

(72) Erfinder: KABATEK, Ulrich; c/o Continental Automotive GmbH, Intellectual Property - Sodener Str. 9, 65824 Schwalbach a. Ts. (DE). HOHMANN, Kai; c/o Continental Automotive GmbH, Intellectual Property - Sodener Str. 9, 65824 Schwalbach a. Ts. (DE).

(84) Bestimmungsstaaten (soweit nicht anders angegeben, für jede verfügbare regionale Schutzrechtsart): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), eurasisches (AM, AZ, BY, KG, KZ, RU, TJ, TM), europäisches (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Veröffentlicht:
— *mit internationalem Recherchenbericht (Artikel 21 Absatz 3)*

Technology space and relatedness measure

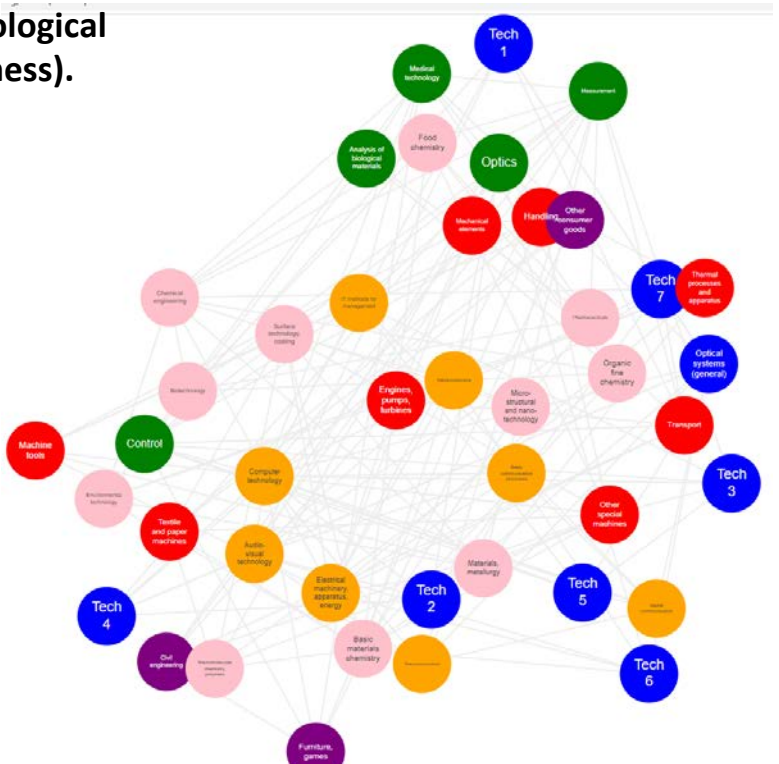
The technology space is a representation of the technological links between the different strategic domains (relatedness).

Elements of the TS represent different (sub-) strategic domains and **links between them represents their degree of relatedness**. The **degree of relatedness** is measured in 2 steps:

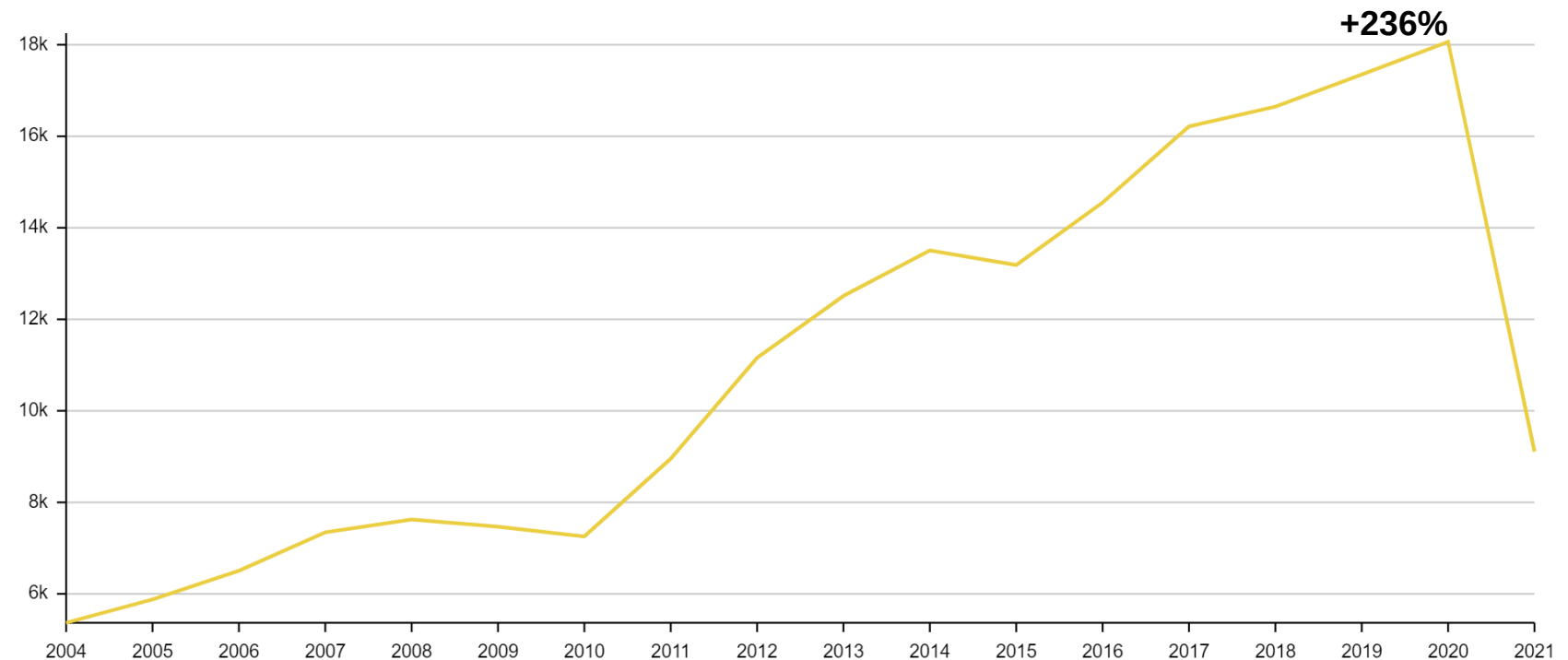
- Count of **co-occurrences** of 2 domains in the same patent
- **Normalization** of theses cooccurrences using the cosine index

The exploration of the technology space allows to understand the links between technologies and the way **knowledge recombines into new inventions**.

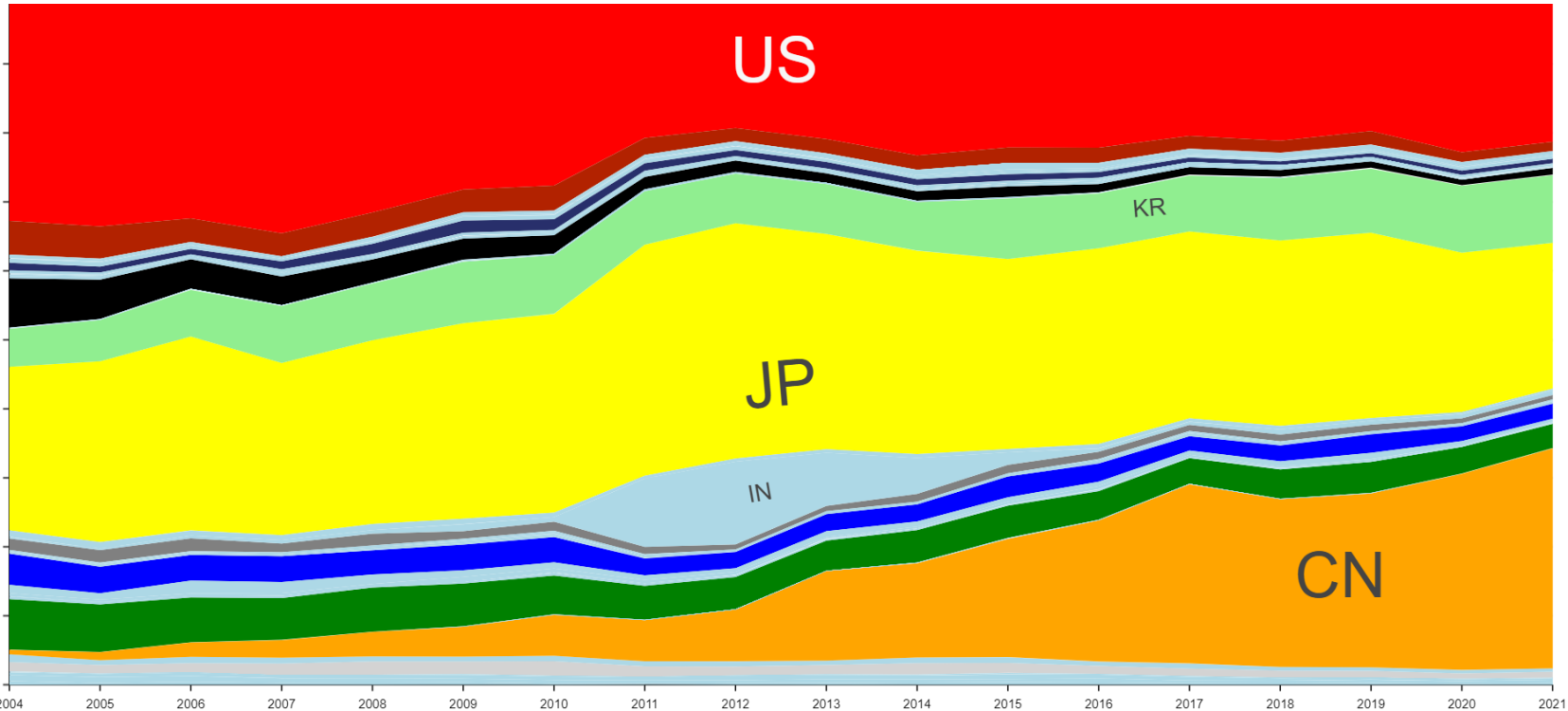
Relatedness metrics are the building blocks of recommendation systems predicting new location hubs or company's diversification potential in different domains.



Velocity – Optical systems

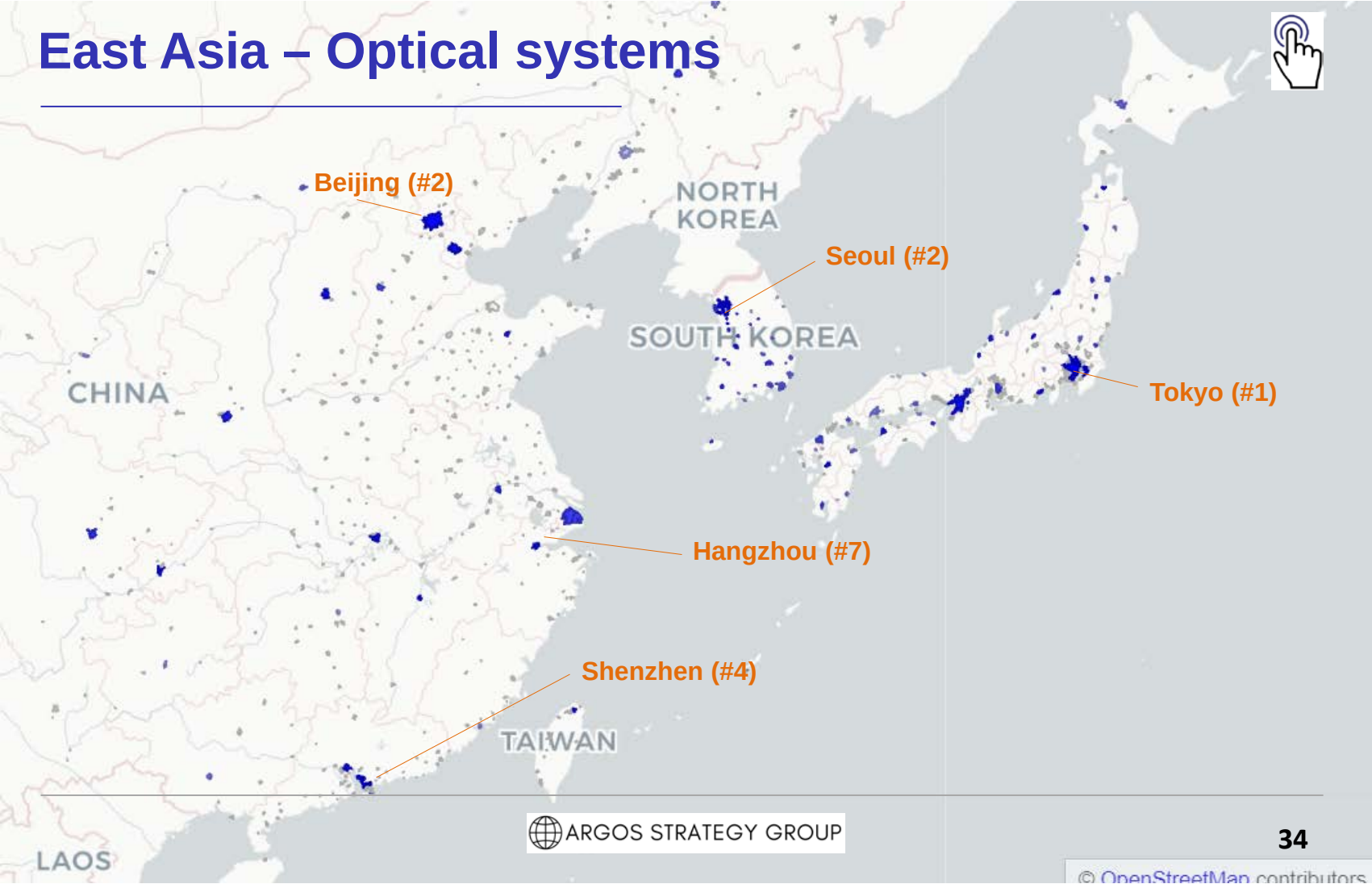


Velocity per country – Optical systems



World urban ecosystems

East Asia – Optical systems



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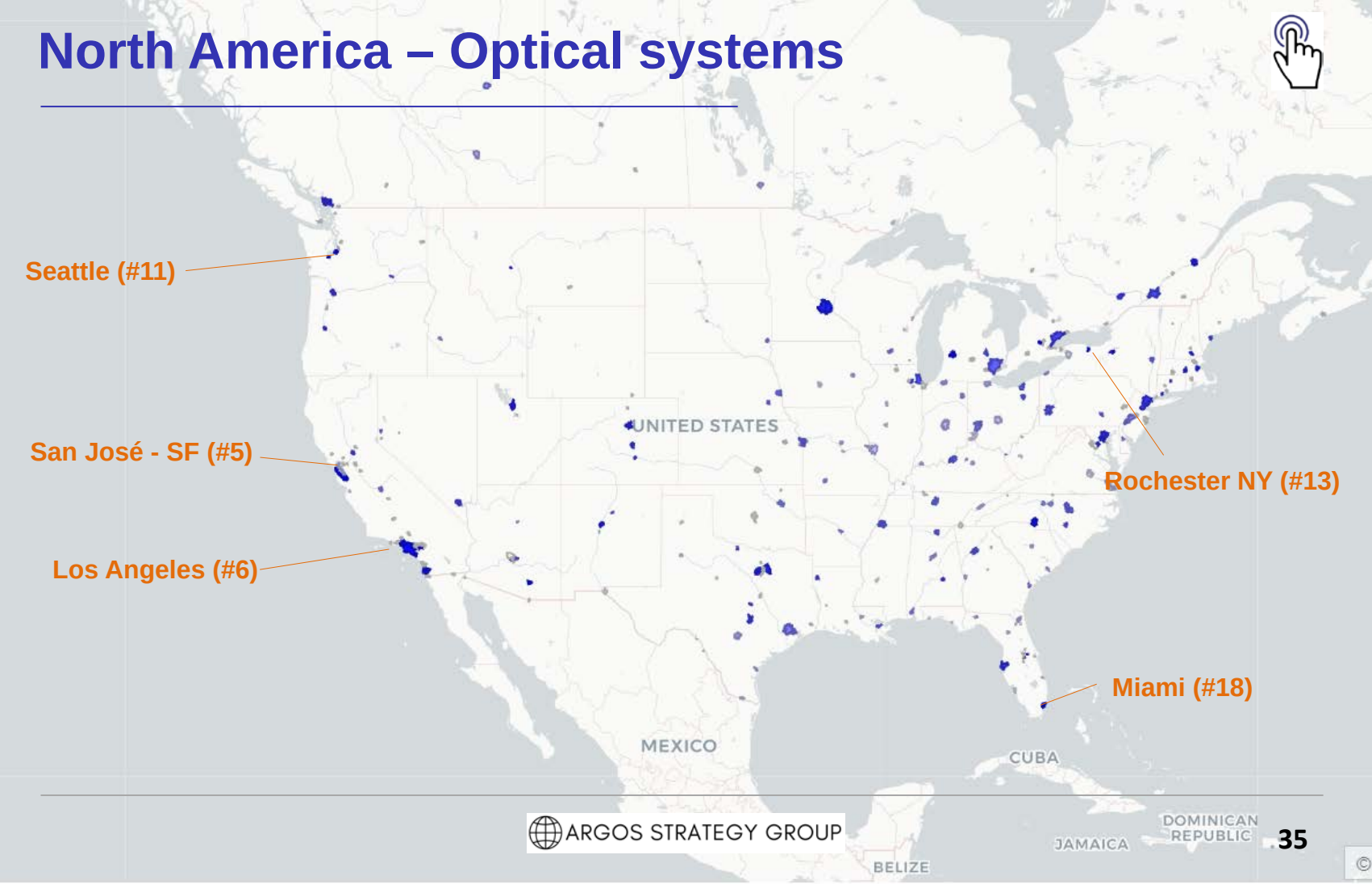
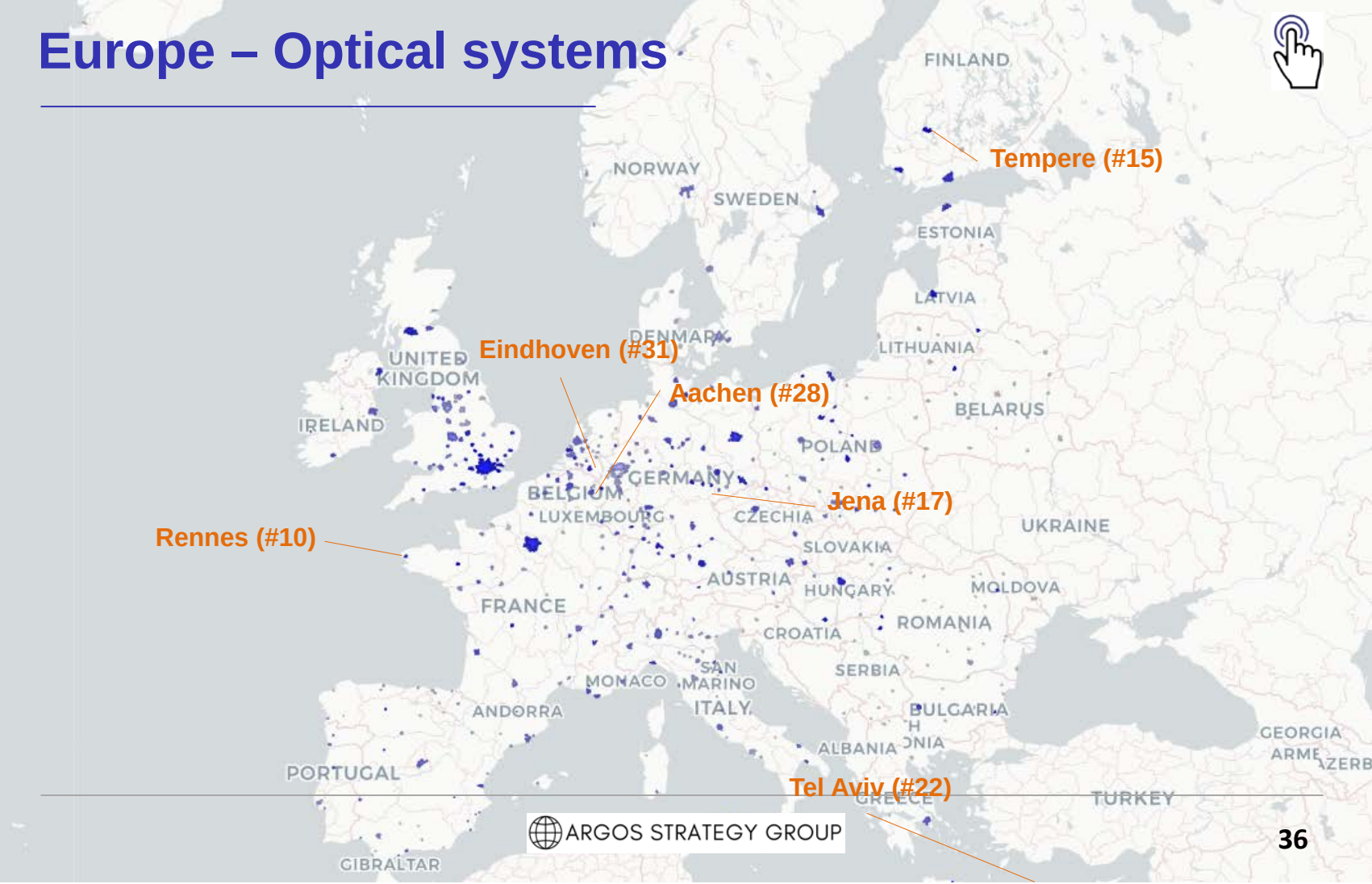
North America – Optical systems

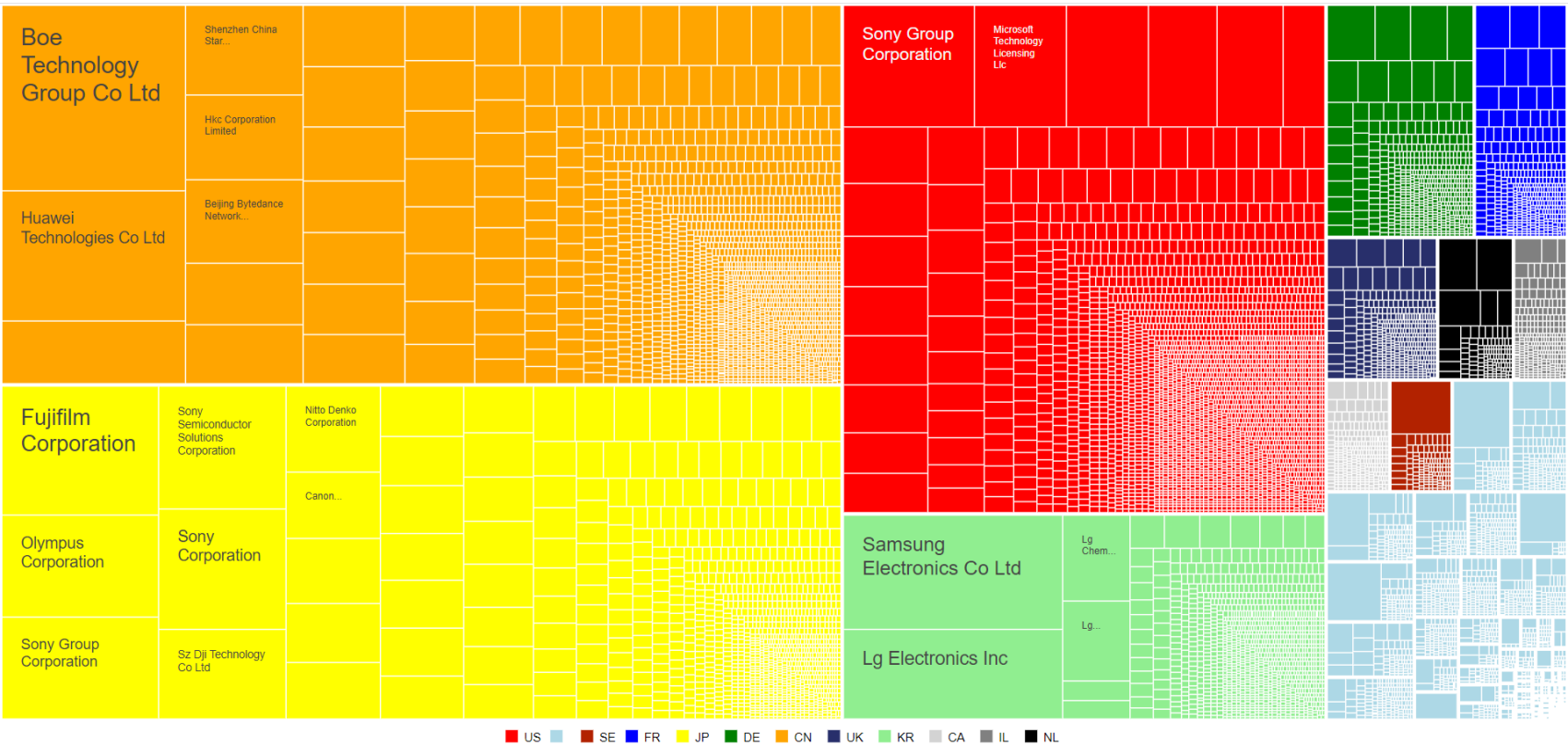


Europe – Optical systems



Key organizations & inventors

Key actors (applicants) – Optical systems



Key actors (inventors) – Optical systems

ZHANG, Li	797
ZHANG, Kai	727
LIU, Hongbin	660
WANG, Yue	607
KIM, Seunghwan	373
KARCZEWICZ, M	365
LIU, Shan	341
XU, Jizheng	318
CHEN, Jianle	276
CHEN, Xiaochuar	255
LI, Xiang	241
LIM, Jaehyun	241
LI, Yi	211
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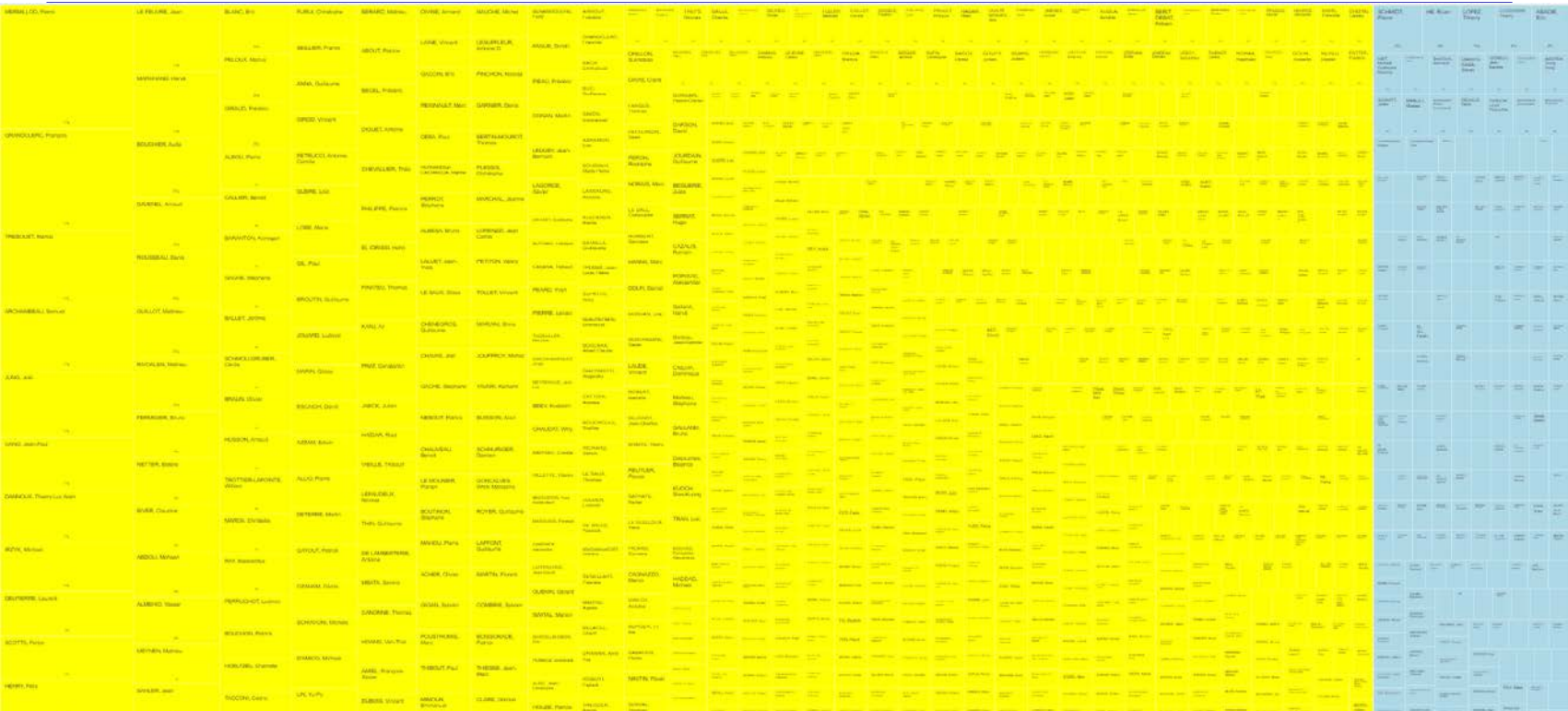
NAM, Junghak	179
DONG, Xue	172
YANG, Haitao	172
WANG, Wei	165
JANG, Hyeongmo	164
CHIEN, Wei-Jung	159
YOO, Sunmi	146
CHEN, Ching-Yeh	144

Key organizations & inventors in urban ecosystems

Key actors (app) in Tokyo – Optical systems & tech 2

Optical systems (general) tech 2

Key actors (inv) in Paris – Optical systems & tech 2



Optical systems (general) tech 2

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