

5G Transparency Project

Basic Overview



A sculptor “chipping away” at a marble block to reveal the sculpture within

February 2022



LOTNETWORK

Why 5G SEP Transparency?

***To increase
social welfare,
lower transaction
costs***



Ronald Coase,
1910-2013
The Sveriges Riksbank
Prize in Economic
Sciences in Memory of
Alfred Nobel 1991

“... for his discovery
and clarification of the
significance of
transaction costs and
property rights for the
institutional structure
and functioning of the
economy.”

What 5G SEP Transaction Costs?

Exemplary

- Understand size and composition of the set of relevant SEP owners at any given time period, and within any given relevant field(s) and jurisdiction(s)
- Understand the relative position of any member within the set
- Consider impact of portfolio development and management initiatives and set goals
- Consider impact of acquisitions and divestitures and design programs
- Obtain superior insight to status quo census offerings and conventional wisdom
- Enhance situational awareness and confidence in decision making

Cellular SEP “Census” Studies

Common Problems

- Declaration data only
- Lack of human eyes-on patent claims (e.g. plain counting or ML only)
- Lack of scientific method, statistical rigor and power
- Static analysis lacking ongoing updates
- Apparent self-interest or partisanship of analyst
- Absence of shared perspective across market (e.g. private/ favorite studies)
- Not comprehensive (e.g. sampling-based only)
- Insufficient effort to yield actionable insight
- Insufficient granularity for key IP executive applications

5GTP

Purpose and Scope

Purpose

- Best 5G patent landscape *for IP executive decision makers*
- *Independent* and *Non-Partisan*
- *Collaborative*, including technology developers, adopters, users, and patentees
- *Shared Perspective*
- *Dynamic*, for the life of 5G
- *Comprehensive*, covering all families in scope

Scope

- Active, granted USPTO or EPO
- Declared to 5G-related specification
- All 5G fields
- All 5G radio layers

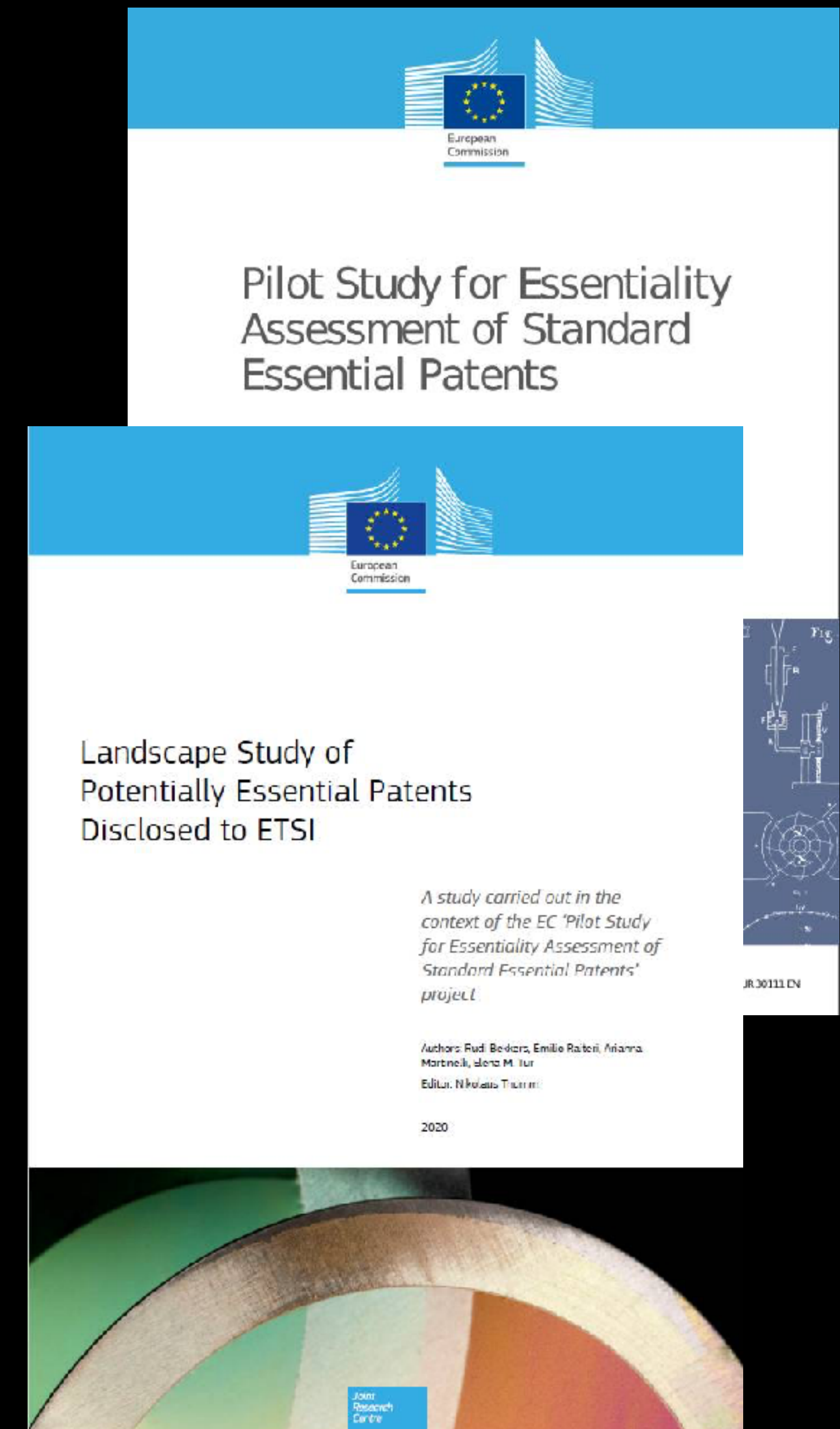
European Commission Standards Essential Patent Initiatives

“...‘Making the most of the EU’s innovative potential - An intellectual property action plan to support the EU’s recovery and resilience’ of November 2020 proposes *ways to improve transparency and predictability in the licensing of SEPs*...

... we observe *continued friction in the uptake of SEP-protected standards*. In addition, the *landscape gets more complex as we move to 5G and beyond, and the number of SEPs, as well as the number of SEP holders and implementers, are increasing*. Many new players are not familiar with SEP licensing, but need to enter into SEP arrangements. *Navigating the SEPs landscape may pose in particular challenges for smaller players*, such as SMEs and start-ups active in the IoT. *The current system does not offer all the tools businesses need in order to come to fast, effective and fair SEP licensing arrangements*. Licensing negotiations take a long time and may end in conflict and litigation, which undermines EU businesses on all sides (notably SEP holders and implementers).

The Commission will improve transparency and predictability in SEP licensing by encouraging industry-led initiatives in the most affected sectors. This could be combined with reforms, including regulatory if and where needed, *aiming to clarify and improve the SEPs framework and offer effective transparency tools.*”

Source: European Commission, [Standards Essential Patents](#)



United Kingdom

5G Diversification Initiative

“15. The Government identified the *concentration of intellectual property rights in the hands of established vendors as a barrier to market entry...*

The Government’s view is that appropriate measures need to be considered to reduce these potential barriers to new entrants and to ensure that revenue from intellectual property rights is fair for suppliers and users of intellectual property rights. *With regard to standard essential patents, the Government’s view is that greater transparency in their essentiality and pricing could be beneficial for both licensees and licensors.* The Government is considering options for monitoring the essentiality of patents...”

Source: [Fifth Special Report of Session 2019-21](#)



House of Commons
Science and Technology
Committee

5G market diversification and wider lessons for critical and emerging technologies: Government Response to the Committee’s Second Report of 2019-21

Fifth Special Report of Session
2019–21

Ordered by the House of Commons
to be printed 27 April 2021

Support for 5GTP

“Transparency in SEP licensing - How to clarify possible exposure upfront?”



“Transparency in SEP licensing - How to clarify possible exposure upfront?”

February 24, 2021

“We want to be a constructive force in bringing more transparency to SEPs generally.”

“...we find that [5GTP] are honest brokers and we have a lot of trust that they are trying to do the right thing in coming up with an accurate methodology and coming up with methodology that is not biased either way. We believe that they are trying a practical approach... They are committed to fairness of process, and to fairness of application ... to have good quality information, and that is something that we very much believe in...”



Fabian Gonnell, SVP, Licensing Strategy & Legal Counsel at Qualcomm

About LOT Network

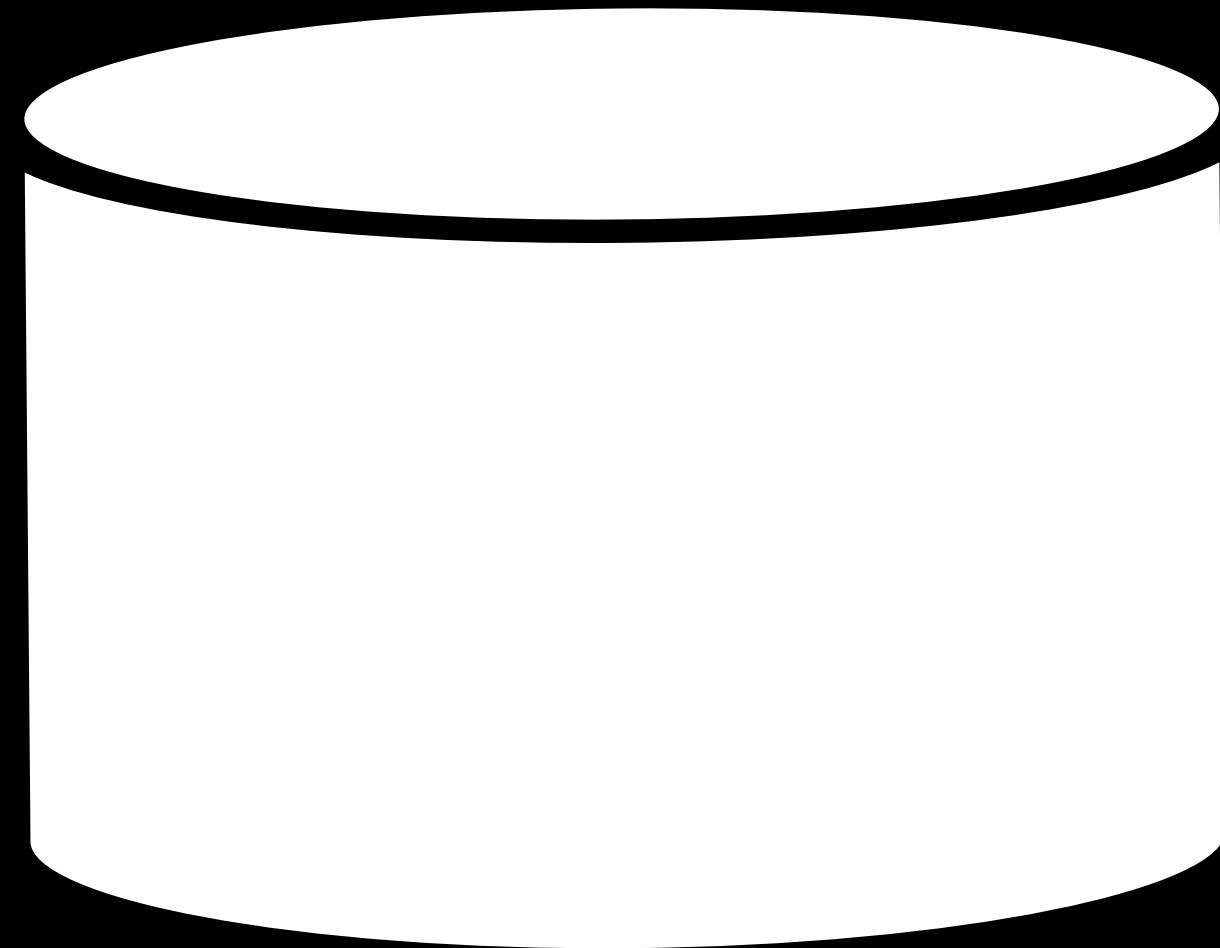
An SEP Non Partisan

Non-Partisan	<ul style="list-style-type: none">• No policy development or advocacy, no lobbying• No litigation (amicus briefs, IPRs)• No perspective on or involvement in cellular SEP licensing• No P&L on 5GTP or cellular SEP activities
Philosophically Independent	<ul style="list-style-type: none">• No shareholders• No controlling entity nor possibility of acquisition• No joint control by cellular SEP partisans
Financially Independent	<ul style="list-style-type: none">• Self sustaining, with over 1,200 members paying \$0-20k/ year• Non-profit, tax exempt entity- no profit motive

Serving IP Executive Decision Makers

Creating a refined 5G Patent Database

ETSI IPR
Database
(5G Segment)

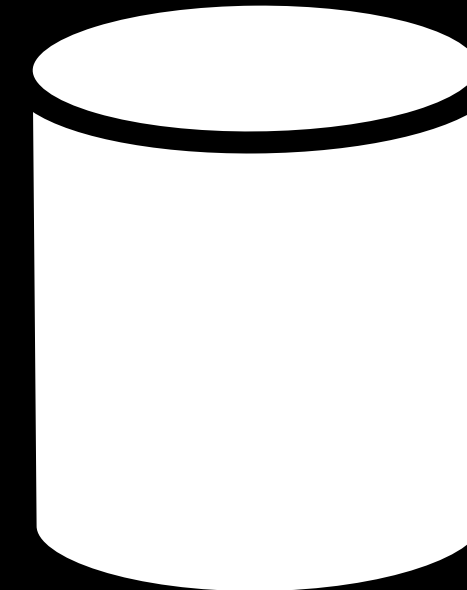


Technology Standards
Development Process

Non-
Essentiality
Filter



5GTP 5G
Database



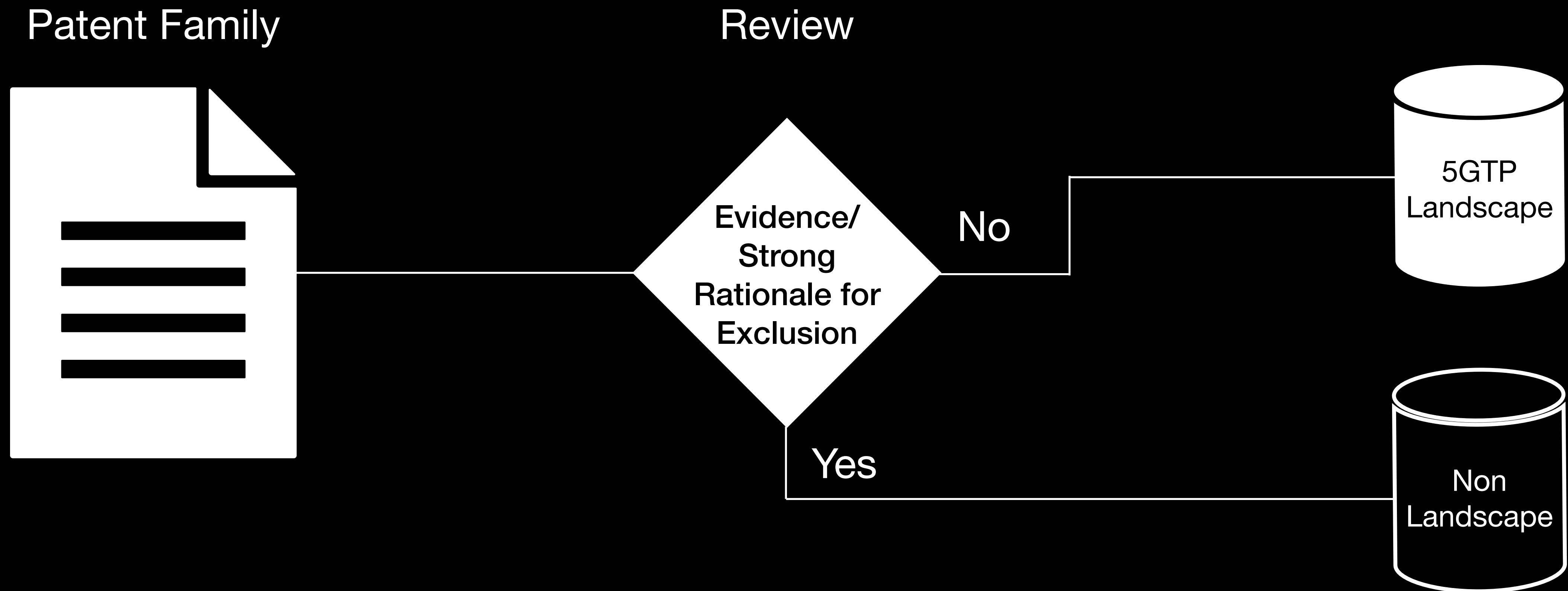
IP Strategy,
Transactions, and
Litigation Processes

Focus

- Accuracy
- Efficiency
- Scale

Review Decisions

Patent Family Non-Essentiality Analysis



5GTP Pilot

Proof of Concept and Caveats

Proof of Concept

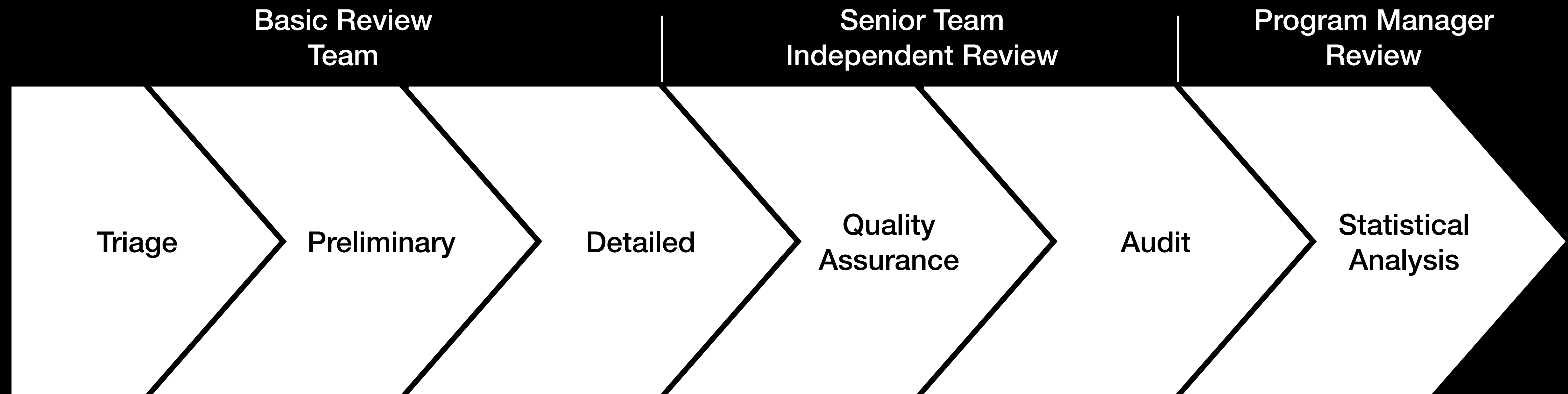
- Organization
- Process
- Methodology
- IT infrastructure
- Quality and efficiency
- Continuous improvement

Caveats

- No *real world insights into 5G or specific companies' portfolios* due to small sample size
- Reflective only of *Pilot performance in terms of accuracy and efficiency*

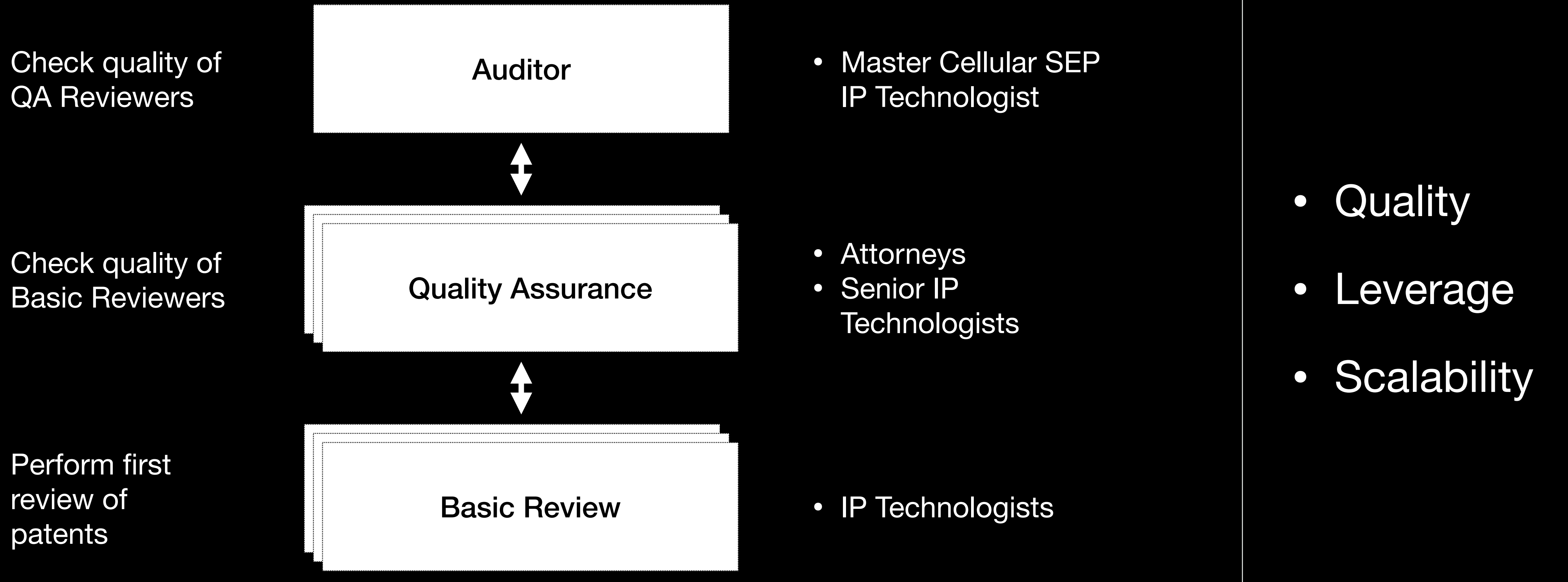
5GTP Pilot Review Process

Each Patent Family



5GTP Organization

Quality Control Structure



5GTP Methodology

Analysis Guidelines & Checklist (Exemplary)

Checklist

- User limitation
- External physical characteristic
- Optimization limitation
- 2/3/4G stack limitation
- Non standardized technology
- Other determinative merits
- Broad family may overcome limitations
- Confidence level

Guidelines

- Focus on present 5G specs (at review)
- Focus on granted patents (at review)
- Agnostic on patent lifespan
- Agnostic on technology field
- Agnostic on radio layer
- Non-speculative futures

5GTP Classifications

Fields and Radio Stack Layers

Field of Use

User Equipment
Automotive (e.g. C-V2x)
Internet of Things (IoT)
Radio Access Network (RAN)
Core Network
Mobile Edge Computing (MEC)

5G Radio Stack

Radio Resource Control (RRC)
Service Data Adaptation Protocol (SDAP)
Packet Data Convergence Protocol (PDCP)
Radio Link Control (RLC)
Medium Access Control (MAC)
Physical Layer (PHY)

5GTP Phase 2

The 5G Perimeter

- **5G relevant only**
- [3GPP Definition](#)
- Relevant TS (1112) plus projects (15)
- Rel 15, 16, 17 only
- TS only
 - ... with at least one declaration < June 30, 2021
- ... with expiration date > Jan 1, 2022
- ... with priority date > Jan 1, 2000
- ... with at least one CPC code in G or H series

TS	4/5G	5G Only	Total
38	1	71	72
29	88	41	129
26	116	14	130
28	95	14	109
24	94	14	108
33	47	10	57
23	70	9	79
22	78	6	84
32	136	5	141
37	45	2	47
34	8	1	9
21	6	1	7
36	91		91
35	24		24
31	19		19
27	4		4
25	2		2
Total	924	188	1112

Projects

1. 3GPP 5G NR
2. 3GPP NR Rel 15
3. 3GPP Release-15 NR
4. 3GPP NR Release 15
5. New Radio (NR)
6. New Radio(NR)
7. NR
8. 3GPP 5G
9. 5G
10. 5GS
11. 3GPP-Release-15 (LTE-Advanced Pro, NR release 15)
12. 3GPP Release-15
13. 3GPP-Release-16
14. LTE Advanced Pro/5G
15. LTE-Advanced/5G

5GTP Landscape Scope

Jan 2021 ETSI Data, Sep 2020 cut-off

USPTO & EPO Active Granted, 5G Declared (as of Jan 2021)	Patent Families (INPADOC extended)
5G declared families in scope	~23k
5G only declared	~15k

- Analyzing declaration database and checking/ refining quantification
- Planning review workflow based upon *technology focus* by TS quantity of references
- Initial focus on **5G NR**

Roadmap

Deliverables

- **Quarterly reports**
 - Each based upon a new random sampling of patent families in scope
 - 4 quarters presently scheduled
 - New quarters added with each additional co-sponsor
- **Statistical analysis**- provides rigorous insights based upon cumulative patent families analyzed through each quarterly update
- **Machine learning classifier**- provides perspective on overall landscape based upon cumulative families analyzed through each quarterly update
- **Sponsors** each receive each quarterly update for the duration of the project

5GTP

Target Sponsors/ Participants

Fields

- Automotive
- Mobile Modules
- Mobile Devices
- Mobile Semiconductors
- Industrial IoT
- Consumer IoT
- Enterprises/ Organizations
- Infrastructure Technology
- Infrastructure Cloud Services
- Mobile Edge Computing
- Technology Development

Types

- Innovators
- Implementers
- Licensors
- Licensees
- Patentees
- Technology Developers
- Technology Adopters

5GTP Contact

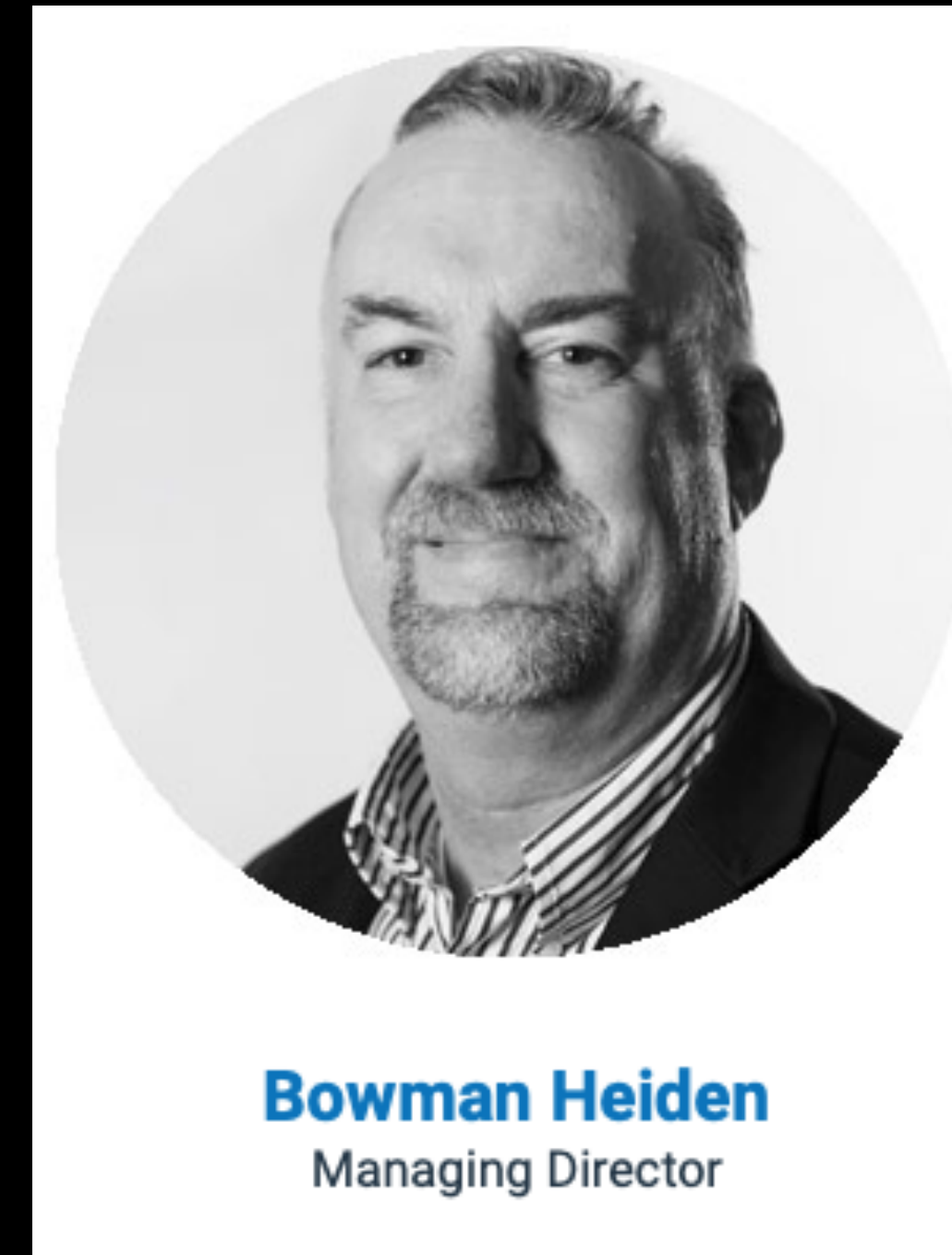
As a top IP strategist, Lew has worked on cellular SEP IP strategy, licensing, transactions, and valuation matters for over two decades, including engagements involving many of today's leading market participants as well as those of the past. In these engagements, Lew has worked with leading licensors, patentees, technology developers, technology adopters, and hedge fund and private equity investors.

Lew has appeared in leading business publications and academic journals such as the Wall Street Journal and Berkeley Law & Technology Journal and published a number of relevant studies of the mobile licensing industry.

Lew has been honored to be a member of the IAM 300 top IP strategists (2009-2021) and holds an MBA from Duke University's Fuqua School of Business and a B.A. in Economics from University of Michigan.



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Bo is currently the Co-Director of the Center for Intellectual Property (CIP), a joint center for knowledge-based business development between the University of Gothenburg, Chalmers University of Technology, and the Norwegian University for Science and Technology.

He is also a Visiting Professor at UC-Berkeley and co-chair of the Technology, Innovation, and Intellectual Property program at the Classical Liberal Institute at the NYU School of Law.

Dr. Heiden is currently a member of the European Commission High-Level Expert Group on Standard Essential Patents.

Dr. Heiden holds degrees in engineering, technology management, and economics, and his research is at the interdisciplinary interface of economics, law, and innovation, in particular, intellectual property and open innovation in knowledge-intensive sectors.

LOT Network Website: LOTNet.com/5G-sep

