

Undeclared Patent Landscapes

Identifying standard-relevant patents and creating patent landscapes

User Problem

In various technology sectors, patent declarations are typically insufficiently reported. Only ETSI, which oversees the cellular telecom technology spaces like 5G and 4G, strictly mandates its members to declare any patents that are potentially essential. However, companies operating in realms such as video coding, audio coding, Wi-Fi, and wireless charging Qi technology face significant challenges in capturing the comprehensive technological landscape they focus on. The challenge with identifying the patent landscape is that many large SEP owners' patent portfolios are not public. Achieving clarity in this landscape would demand extensive and costly manual efforts by subject matter experts. Even with such efforts, different companies base their analyses and, more crucially, their license negotiations on disparate datasets. This discrepancy contributes to heightened litigation costs and protracted license negotiation processes.

Goal

The objective is to pinpoint patents associated with a specific technology generation that qualify as potentially standard essential. The resulting patent landscape will include both SEPs and non-SEPs, allowing users to independently determine how to navigate and refine it, such as by filtering by the semantic essentiality score (SES).

Solution

To identify standard related patents, the IPlytics team has utilized Cipher, a supervised machine learning algorithm, to identify undeclared patents that are potentially essential. The Cipher algorithm uses true positive examples (e.g. pooled patents) but also true negative examples of patents unrelated to the standard as training data to build a technology landscape. From this broad patent landscape, random samples of patents are presented to subject matter experts to confirm patents as SEPs but also to identify patents that have no relation to the standard. These new examples of true positive and true negative patents are then again used as training data. With this iterative approach Cipher step by step creates a technology landscape of standard related patents. Finally results of the patent landscape are presented to top patent owners to verify patent ownership shares. Still, one must note that the standard related patent landscape does include both, verified SEPs but also many non-SEPs, in other words patents related to the standard technology but not essential to the the standard implementation.

The patent landscape classifier-building process consists of the following stages:

Stages	The following content is included in the classifier process
1. Scoping & Research	The Cipher Solutions Analyst works directly with a stakeholder to define a scope of work. Ideally, this will be based on documentation of the technology area that is to be classified. Documentation contains any keywords or concepts associated with the technology, along with any key concepts or themes that should be categorically excluded from the results. It is helpful to provide any of the following: ▪ Technology brief ▪ Keywords ▪ Positive and Negative example data
2. Initial Building	The initial building of the classifier aims at producing a training set that accurately captures relevant patents and can make distinctions between closely related examples in similar technologies. The initial building process includes: ▪ Patent upload of pre-populated positive training set ▪ Similar family identification for sourcing a negative training set ▪ Suggestions which are mainly used to source and remove negative example from the dataset
3. Evaluation	▪ The landscape results are included in a true blind testing with several SEP holders which provide feedback on the underlying quality and recall rates. ▪ If the feedback and precision is acceptable considering the scope of the project, we conclude a final landscape. Otherwise, we will refine the landscape to improve its precision.
4. Feedback & Refinement	▪ The landscape results are included in a true blind testing with several SEP holders which provide feedback on the underlying quality and recall rates. ▪ If the feedback and precision is acceptable considering the scope of the project, we conclude a final landscape. Otherwise, we will refine the landscape to improve its precision.
5. Delivery	▪ The final landscape is included in the LexisNexis IPlytics platform, where customers can execute the searches and analyze the underlying landscapes.