Harry Surden
University of Colorado Law School

Interpretation as Constraint Satisfaction: A Theoretical Framework for Patent Claim Construction

In a patent infringement lawsuit, the claim construction process is among the most important parts of the proceedings. During this procedure the court establishes the definitive interpretation of the words of the patent claim, typically electing between competing definitions offered by litigants. Because the proposed definitions are typically framed to favor each party's own position, the selection of one definition over another is often dispositive on the issue of infringement. A significant portion of patent cases are settled or otherwise resolved following the claim construction procedure.

Despite the importance of the claim construction process, it remains relatively under-theorized in the academic literature. The are few, if any, overarching theoretical frameworks that serve as guides for assessing which rules and procedures advance the overall policy goals of the patent system, including the provision of notice and predictable boundaries for potential infringers. As a result of this lack of theoretical guidance, the rules and doctrines surrounding the claim construction process have shifted dramatically, as the courts have experimented with differing regimes. For example, the Federal Circuit's doctrine regarding the hierarchy of evidence of claim meaning has alternated between deprecating and prioritizing intrinsic over extrinsic evidence.

This paper offers a theoretical framework for devising and measuring claim drafting and claim construction procedures against the policy goals of notice and predictability, by borrowing from the mathematical formalism known as "constraint satisfaction." Constraint satisfaction is a schema for describing possible solutions for variables whose values are limited by constraints. It was developed within the computer science domain to model the elimination of ineligible states which do not meet certain constraint criteria within a vast search space of possible algorithmic states.

The process of claim interpretation can be analogized to the process of constraint satisfaction - in particular, the elimination of states not satisfied by constraints. The narrowing of plausible interpretations for patent claim terms can be seen as the elimination of potential claim interpretations that do not meet a series of internal and external constraints on claim meaning. These constraints arises from several familiar sources, including intrinsic sources within the patent document and various extrinsic sources. The constraint satisfaction formalism, by analogy, presents a unifying theory for understanding the utility of intrinsic and extrinsic constraints. In light of this theoretical view, this Article advocates particular rules and procedures which elevate explicit, strong ex-ante constraints on meaning, over weaker, implicit constraints. For example, this theoretical view suggests that patentees should be required to be their own lexicographers by providing default or explicit definitions for each claim term.