Computable Contracts in Intellectual Property Law

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This Article explores the expanding role of "computable contracts" in intellectual property law and situates the concept of computable contracts in the legal theory landscape. A contract is a legally binding promise, voluntarily undertaken by two or more parties. The typical contract specifies conditions describing fulfillment of its obligations. A *computable contract* is one in which one or more of the substantive contractual obligations have been designed in such a way that computer systems are capable of automatically determine *prima-facie* compliance with those obligations. Such computable contractual obligations offer advantages over traditional written obligations, including efficiency of compliance assessment, and automated detection of inconsistent or contradictory legal obligations.

This Article contextualizes computable contracts within the legal theory and contract literature. In earlier work, I described how lawmakers can deliberate formulate legal obligations in particular ways (structured data, formally realizable metrics) in order to make their compliance more (or less) amenable to computation. Computable contracts are the natural extension of this theoretical framework. Contracting can be considered "private-lawmaking" in the sense that the parties can control both the substance, and importantly, the *form* of their contractual obligations. In particular I describe how contracting parties can design the form of their legal obligations not simply to be relatively legally certain to determine *ex-ante* (as in a formally realizable bright-line legal rules), but to be deliberately determinable by *computer systems*. I also discuss the limits and disadvantages to formulating contractual obligations in this way.

While still an incipient trend, there are actual examples of computable contracts in use today in several important fields including finance (electronic derivative and swap contracts), and in intellectual property (computer-based structured licensing agreements). As more intellectual property content becomes electronically mediated, the use of computable contracts will likely only increases in areas such as intellectual property. I argue that contract law, including the background framework for adjudicating intellectual property licensing disagreements, will increasingly need to take into account the increased in the use of such automated contracts.