

The US SPL and Its ETCIs are Deterministic Mathematics — i.e. Applied Mathematics.

Sigran Schindler
 TU Berlin & TELES Patent Rights International GmbH
www.fstp-expert-system.com

For recognizing the truth of the above statement^{1.a)}, implying dramatically simplifying and vastly automating by AI any ETCI's SPL satisfaction test, requires solely knowing the colloquial English dialect ISL^{b)} — as being pure Mathematical Logic. Most patent community members won't believe the above statement.

This short mail (being a 'PS' to^[552,562]) explains why this doubt is wrong — by explaining below and in the ANNEX the fully mathematized FSTP-Test, which an ETCI passes if and only if it satisfies the framework based SPL. Then you know how the transformation of a metarational^{2.b)} problem first into a rational problem and then into a mathematical problem works. Then mathematical/deterministic AI is able to resolve it (partially explained already in^[552,562]).

The FSTP-Test — without its Contexts.

(Meta)rational Claim Interpretation, $mratCI$:	\langle external input := $mratCI$ in ISL, internal output := a $COM(mratETCI)$ \rangle	& begin:
1) if $[COM(ETCI)$ is factually E-complete \wedge -correct \wedge -definite \wedge {O-crC0n = (\wedge 1 $\leq n \leq N$) (E-crC0k _n) \wedge n-crC0n), $\forall 1 \leq n \leq N$ } \wedge $\sum 1 \leq n \leq N$ K _n =K]		then go on;
2) if $[{(O-inC0n, E-inC0k_n) \forall 1 \leq n \leq N \wedge 1 \leq k_n \leq K_n}]$ are ex- or implicitly lawfully disclosed]		then go on;
3) if [O-crC0n is ex- or implicitly enablingly disclosed, $\forall 1 \leq n \leq N$]	then output $mratE-crCS = COM(mratETCI)$	& stop.

(Meta)Rational Claim Construction, $mrat+ratCC$:	\langle internal input := $COM(mratETCI)$, external output := $COM(ratETCI)$ \rangle	& begin:
4) if $[COM(mratETCI)$ is $mrat$ directed to an exceptional concept, i.e. rat comprises in the PE TT0 an E-xcrC]		then go on;
5) if $[COM(mratETCI)$ has $mrat$ an application of ..., i.e. rat an application that uses a TT0 without modifying it]		then go on;
6) if $[COM(mratETCI)$ is $mrat$ transforming the nature of the claim', i.e. rat transforming the PE claim of TT0 into the PE ETCI']		then go on;
7) if $[COM(mratETCI)$ is $mrat$ significantly more than ...', i.e. rat E-crCSETCITTO basically independent of E-crCSTT0] ...	then input $COM(mratRS) ::= \Phi$	and go on;
8) if $[COM(mratETCI)$ has a rat definable A/N-Matrix over RS] and determine it		then go on;
9) if $[COM(mratETCI)$ has a rat non-cherry-picking creative height, $crH \geq 2$]	then output $COM(ratETCI)$	is PE & stop;

Mathematical Claim Construction, $matCC$:	\langle internal input := $COM(ratETCI)$, external output := $COM(matETCI)$ \rangle	& begin:
4') if $[E-xcrCSTT0 \neq \Phi^*]$		then go on;
5') if $[([I]^{TT0} scope(E-crCSETCI) \subseteq scope(E-crCSTT0)) \wedge ((\exists E-crC^\circ \in ETCI \setminus TT0) \wedge (\exists E-crC^{\circ\circ} \in TT0)) : E-crC^\circ \parallel E-crC^{\circ\circ}]$		then go on;
6') if $[[\exists E-crC^* \in E-crCSETCITTO]]$		then go on;
7') if $[E-crC^* \neq E-crCSTT0]$	then input $COM(mratRS) ::= \Phi$	and go on;
8') if $[\forall i,n,k \exists \Delta_{i,n,k} ::= \text{if } (E-crCink = E-crC0nk) \text{ 'A' else 'N' is mathematically definable}]$		then go on;
9') if $[crH ::= \sum 1 \leq n \leq N (\min \forall i \in [1..i] \{ \langle \Delta_{i,n,1} = 'N', \dots, \Delta_{i,n,K_n} = 'N' \rangle \}) \geq 2]$	then output $COM(matETCI)$	is PE & stop.

Legend: The FSTP-Test in ISL notation with CI in $mratKR$ & CC in $mrat+rat+matKR$. (See the ANNEX for larger letters & some explanations)

The FSTP-Test is presented in ISL's very simple syntax & semantics. Thus: "Why has this powerful SPL-satisfying test of an ETCI not been discovered earlier?" This question has 2 quite different answers: ●Firstly, any member of the patent community would instantly reply that the Supreme Court's framework requirements — to be met by any ETCI for being PE — have initially been totally incomprehensible^{c)}. ●Secondly, for grasping the Supreme Court's 'ETCIs' framework', even the author's unusually broad (partially only journalistic) knowledge^{d)} had to struggle for developing, as by the Supreme Court during its Alice hearing requested^[500/1.d)], the interpretation of its 'SPL framework thinking' of Mosaic wisdom into the foreboding cognition of ETCIs' upcoming potentials inevitably comprising socioeconomic threats^[562] — to be excluded by certain ETCIs' nPE of minimal invasivity into § 101 freedom of invent.

¹ a For all abbreviations/acronyms not defined in this short mail, yet nevertheless used therein, see^[550,552] and earlier FSTP mails.
 b "Innovation Specification Language, ISL^[372] is a small contextfree natural English dialect, slightly expanded by semiotic SPL framework notions, as shown by the FSTP-Test. Any by ISL-EBNF grammatically correct sentence hence has a by Mathematical Logic uniquely defined rational^{2.b)} meaning^[Wikipedia]. Internationally, all SPLs have basically the same 'Finite First Order Logic, FFO' semantic as the US SPL, especially the EPC's SPL. The set of all sentences in any national SPL includes all its ETCIs.
 c — which is definitively untrue, as a rudimentary FSTP-Test version was rudimentarily published by the author immediately after the Supreme Court's Mayo decision, at the latest with^[5], and since then only very few people care for it (as since then none of them understood it, i.e. except for my scientific coworkers virtually nobody participated in its many published iterations). The others simply did not understand why I was searching in the workings of the 6 Supreme Court's framework decisions.
 d — in practical & theoretical Mathematics/Physic/Satellite-Mechanics/Communications-Techniques/AI/IT & Economies & SPL & some of their basic Philosophies and their historic paradigm shifts^[335] —

The practical advantages of this rationalizing/mathematizing of SPL and its ETCIs are just amazing: They enable excessively leveraging on all ETCIs, as being structurally of the same deterministic AI. I.e.: They comprise not only ●drafting for any ETCI an a priori SPL-satisfying patent that hence ●is factually vastly and legally absolutely robust, but also enable checking for any ETCI, ●whether its scope is where violated by the scope of a then infringing patent (hitherto totally impossible to determine dependably), ●whether and where it violates another ETCI's scope, ●what is e.g. its semantic distance from another ETCI('s scope) and where, — all such information being vastly and/or totally automatically determinable. The (not yet quite) completely functional prototype of the FSTP “**Innovation/Invention Expert System, IES**” is over the Internet for all friendly testers for free and by us strictly confidentially accessible^{2.a)}.

The equivalence of all notions in $^{mrat}CC \equiv ^{rat}CC^b)$ in the FSTP-Test, i.e. in its test4)-7)^{c)} or test4)-9) — on the left and right side of their ‘i.e.’ — evidently stands for what these notions in an ETCI's ^{mrat}KR & ^{rat}KR tell: Noticing the $^{mrat}/^{rat}$ qualified KRs of involved notions refines them only mentally, but significantly clarifies notionally the transformation process of an ETCI's original ^{mrat}KR in its patent into its $^{rat+mat}KRs$. Note that, for any ETCI's FSTP-Test, test4 is part of the Rationality in all USPTO's 2019 PEG, just as test5 (though the notion of ‘application’ is in these versions only incompletely interpreted, see the ANNEX), while in these PEGs Rationality is mute about test6-7, if the ETCI ‘as a whole’ is to be PE-tested even in test6-9. In both cases, these tests were left in Metaphysics. It then is absolutely impossible to rationally show that the ETCI meets *Alice*'s PE specification.

For key details about the usually trivial as evident^{d)} above 2 kinds of mental mrat -to- mrat or mrat -to- rat mapping(s) — i.e. of ●)the ETCI in its individual patent specification's ^{mrat}KR onto the *Alice* required uniform $COM(^{mrat}ETCI)$ as by the $CI|^{FSTP}$ enabled, whereby this mapping implied ^{mrat}E -crCS of this $COM(^{mrat}ETCI)^e)$ onto the FSTP-Test's components, and within ^{mrat}E -crCS of ●)its mrat compounds of E-crC and semiotic SPL notions' onto their logical equivalent ISL expressions of ^{rat}E -crCs in test 4-9, both bullet points for only relatively few ETCIs not necessarily trivial (in spite of^{d)}) — see the ANNEX.

^{2 a.} Please register as friendly user at FSTP-expert-system.com, for checking in & first steps there is cost-free personal service.

b. Correctly interpreting the Supreme Court's SPL-framework indispensably requires the notional scrutiny known since and from Analytic Philosophy that often is felt (misleadingly) to be superfluous. Accordingly, the meaning of a bold term below on the left denotes its notional property – being of a legal and/or factual quality of an ETCI item – axiomatically defined to the right of it to be:

- **transcendental** – this ETCI item is excluded from SPL-satisfiable testing, as embodying a highly speculative notion;
- **metaphysical** – not being “highly speculative”, but describable such that this property is recognizable to be amenable to metarationalization, hence describable by informal “**O(-level)-predicates**” of this ETCI located on its notional **O-level**;
- **metarational** – being ISL-expressions ^[e.g.372,390] describing the semantics of all identifiable & relevant O-predicate parts, i.e. being conjunctions of “**A(-level)-predicates**” of ISL-notions, hence a priori axiomized or easily axiomizable, located on its notional **A-level**;
- **rational** – being describable by basic English ISL-expressions describing the individual summands of the A-predicates' such conjunctions, i.e. being rationalizable and mathematizable by elementary “**E(-level)predicates**” located on its notional **E-level**;
- **mathematical** – being describable by E-predicates in mathematical KR.

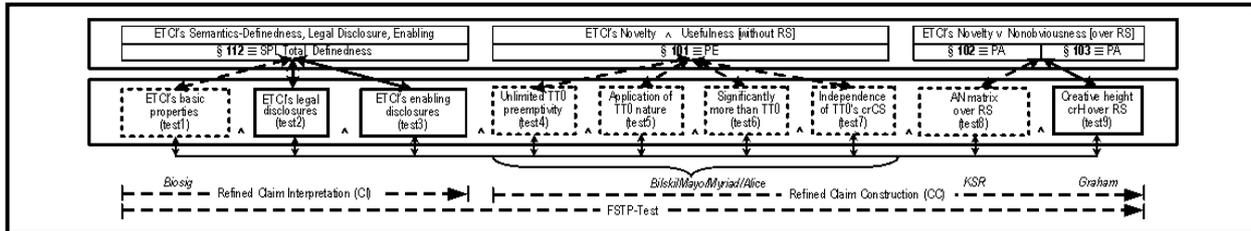
c. For test1-3 see the ANNEX, test8-9 work with $COM(RS^{mrat}) ::= \Phi$. Reducing an ETCI's PE test to test1-7 — as usually done — is a legal error.

d. Any ETCI is inevitably defined on top of a model — at least 1 model for any type of E-xcrCs comprised by the ETCI — there is no universal meaning of the notion ‘evidence’ of something's property: I.e., this metaphysical ‘evidence’ of a property of something is rationally meaningful only over this something's model. Practically this nonexistence of a universal meaning ‘evidence’ is totally irrelevant — but is important to understand for approving the above mappings applied within the FSTP-Test. These mappings transforming thinking from Metarationality into Rationality/Mathematics are in this sense evident (over their models) as they are there totally transparent — although not necessarily trivial. The first mapping from metarational to rational trivially remains metarational — as it always occurs in rationalization of something originally metaphysical, e.g. the natural numbers (recognized by I. Kant already).

e. — whereby it is defined in ^[e.g.FSTP] as O-/A-/E-layered/levelled ETCI specification as of^{b)}, in FSTPtech denoted its “**normal spec**”.

ANNEX: The FSTP-Test — with its Contexts.

This ANNEX provides an overview about the whole FSTP-Test. I.e., additionally to page 1, the ANNEX shows in the top box the mappings of §§ 101/102/103/112 onto the test1-9 (and the resp. Supreme Court decisions), in the next box in test1-3 it specifies of the ETCl-elements their ratE-crCS of COM(ETCI), being all SPL properties/meanings of their E-crCs by unit(s) — not showing here — axiomatically defining them, and in the next box by test4-9 specifying the framework relations between these E-crCs. The fourth box is a repetition of the third one, yet in matKR. Part of the 3. bullet point is covered by [508], not here.



Metarational Claim Interpretation, mratCI: <external input := mratCI in ISL, internal output := a COM(mratETCI)> & begin:
1) if [COM(ETCI) is factually E-complete ^-correct ^-definite ^-(O-crC0n = ((^1<=k<=N) E-crC0k) ^ncrC0n) / 1<=N], ^1<=N, ^1<=N, ^1<=N] then go on;
2) if [(O-inC0n, E-inC0k) | ^1<=n<=N ^ 1<=k<=K_n] are ex- or implicitly lawfully disclosed] then go on;
3) if [O-crC0n is ex- or implicitly enablingly disclosed, ^1<=n<=N] then output mratE-crCS = COM(mratETCI) & stop.

(Meta)Rational Claim Construction, mrat+ratCC: <internal input := COM(mratETCI), external output := COM(ratETCI)> & begin:
4) if [COM(mratETCI) is mrat directed to an exceptional concept, i.e. rat comprises in the nPE TT0 an E-xcrC] then go on;
5) if [COM(mratETCI) has mrat an application of ..., i.e. rat an application that uses a TT0 without modifying it] then go on;
6) if [COM(mratETCI) is mrat transforming the nature of the claim, i.e. rat transforming the nPE claim of TT0 into the PE ETCl] then go on;
7) if [COM(mratETCI) is mrat significantly more than ..., i.e. rat E-crCS ETCITTT0 basic indep. of E-crCSTT0] then I input COM(RSmrat) := ^ and go on;
8) if [COM(mratETCI) has a rat definable A/N-Matrix over RS and determine it] then go on;
9) if [COM(mratETCI) has a rat non-cherry-picking creative height, crH >= 2] then I output COM(ETCI)rat is PE & stop;

Mathematical Claim Construction, matCC: <internal input := COM(ratETCI), external output := COM(matETCI)> & begin:
4') if [E-xcrCSTT0 != ^] then go on;
5') if [(TT0scope(E-crCSETCI) ^ scope(E-crCSTT0)) ^ ((^ E-crC^ ^ ETCI \ TT0) ^ (^ E-crC^ ^ TT0)) : E-crC^ || E-crC^] then go on;
6') if [(^ E-crC^ ^ E-crCSETCITTT0) { ^ (E-xcrC ^ E-crCSETCITTT0)}] then go on;
7') if [E-crC^ != E-crCSTT0] then I input COM(RSmrat) := ^ and go on;
8') if [v^i,n,k ^ ^i,n,k := if (E-crCink = E-crC0nk) 'A' else 'N' is mathematically definable] and determine it then go on;
9') if [crH := ^1<=n<=N (min v^i,n,k | { ^i,n,1 = 'N', ..., ^i,n,k = 'N' })] >= 2] then I output COM(ETCI)mat is PE & stop.

Only the matKR box exposes clearly and unmistakably the Supreme Court's Alice requirements as to the relations between the E-crCs, namely in test4-7 (while test8-9 still need whatever functional framework determinations by the CAFC and confirmed by the Supreme Court or by the latter or by Congress as an indispensable extension of the Alice decision):

- Line 4': the right side's '≠ Φ' stands for "E-xcrCSTT0 comprises an abstract idea or a natural phenomenon/law" [504,566].
Line 5': the '||' stands for "ETCI's application by its E-crC^ uses TT0 — in the sense of 'use hierarchy — by an E-crC^ [FSTP]" .
Line 6': originally the FSTP-Test had the restriction {...}, but it excludes also non-threatening ETClS — hence is by Alice not required.
Line 7': the '≠' stands for "ETCI's application comprises an E-crC^ basically independent of TT0 [552,562], i.e. an "inventive concept".
Line 8': there is no definition for when this condition is true.
Line 9': originally the FSTP-Test had the restriction "≥1", but "≥2" may help to render trivial ETClS as nPE.

Finally: For rendering [504,566] fully Alice conforming, test5-9 must be taken into account. If the Congress intends to simplify the framework, it may drop whatever from test4-9 of the FSTP-Test, yet this creates new uncertainties about § 101.

Excerpt from the FSTP-Project's Reference List (31.10.2019)

Many FSTP-Project mails, including this one, are written in preparation of the textbook [182] – i.e. are not fully self-explanatory independent of other FSTP-mails.

[5] S. Schindler: "Math. Modeling SPL Top-Down vs. Bottom-Up", Yokohama, 2012)
[9] S. Schindler: "Patent Business — Before Shake-up", 2015, 2017, 2019/Q4.
[182] S. Schindler: "AI Based Patent Technology", Textbook, to be publ. in 2020.
[314] J. Duffy: "Counterproductive Notice in Literalistic v. Peripheral Claiming", UV, June 2016".
[335] T. Kuhn: "The Structure of Scientific Revolutions", UCP, 1962, see also Wikipedia
[372] S. Schindler: "ISLs & KR, and Easily Drafting & Testing Patents for Robustness", pbl. 16.05.2017)
[374] Justice Thomas: Friendly Comment on FSTPtech, 04.12.2015)
[495] S. Schindler, B. Wittig: "UC vs. Broad's CRISPR Patents ...", Part III, publ. 30.01.2019)
[504] USPTO: The 2019 §§ 101&112 Guidelines, 04.01.2019)
[508] B. Wittig, S. Schindler: "UC vs. Broad/MIT/Harvard's CRISPR Patents & the Supreme Court's Framework — Graphical Support in MPEP/ETCI Specification, Part V", to be pub. before 08.12. 2019.
[510] S. Schindler: "Finally, CAFC & USPTO Started Friendly! One Year of Andrei Iancu's Spirit in the USPTO — and All US Legal Patent-Business is of Good-Will.", publ. 05.03.2019.)
[526] S. Schindler: "The Congress's New § 101 Initiative Accelerates ...", publ. 15.05.2019)
[527] T. Tillis, C. Coons, D. Collins, H. Johnson, S. Stivers: "Press Release", publ. 17.04.2019)
[541] T. Tillis, C. Coons: "What We Learned at Patent Reform Hearings", publ. 24.06.2019)
[544] Sens. Tillis, Coons: "Statement on key Federal Circuit decision, continued uncertainty about patent eligibility", 08.07.2019. *)
[550] S. Schindler: "A Comment on Two Heavyweight Letters to the Congressional Subcommittee", publ. 5.08.2019)
[552] S. Schindler: "CAFC's Anew Legal Errors in Its ETClS PE-Decision Need Supreme Court Clarification", p.15.10.2019)
[557] UC Berkeley: "PR Largest CRISPR Portfolio", 08.10.2019)
[561] W. Xie: "Examining Confusion Between the Chamberlain & Berkheimer CAFC Decisions", 09.09.2019, IPWATCH.1)
[562] S. Schindler: "CAFCs & USPTO's ETCl Patenting Fails Rationalizing Patents Supreme Court PE Requirement", publ. 24.10.2019).
[566] USPTO: The 2019 § 101 October PE Guideline [504], 18.10.2019)
[569] WIPO: "World Intellectual Property Indicators 2019", *)
[570] S. Schindler: "US SPL & Its ETClS are Det. Maths — i.e. Appl. Maths.", this mail, publ. 31.10.2019)
[571] S. Pierce: "PE of Diagnostic Tools: Utility as the Key to Unlocking Section 101", 27.10.2019, WATCH-DOC)
*) documents & complete Ref. List on www.FSTP-expert-system.com