PATENTS' ABSOLUTE ROBUSTNESS AND THE FSTP-TEST – SEMI-AUTOMATED BY THE INNOVATION EXPERT SYSTEM, IES

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ABSTRACT OF THIS SPECIFIC PRESENTATION': ITS SCREEN SHOTS & THEIR ABSTRACTS

For each of the 10 'Screen Shots', except **VI.**, its 'Abstract' summarizes its oral message, by explaining its topics presented in much more detail – thus *MAKING NOTES SUPERFLUOUS*.

For an ET CI' (ET = Emerging Technology), the first 8 Screen Shots **I.-VIII.** , except **VI.**, report about:

I. the two here interesting principles of quantifying an ET CI's generative compound inventive concept, **1.)** into its set S of atomic quanta of inventivity and **2.)** by evaluating S by the 10 atomic social concerns of 35 USC SPL; **II.** its eRepresentation as eKNOW; **III.** the relations between the eKNOW components of S; **IV.** the interrelations between S and the "**Substantive Patent Law, SPL**", in the US being: **35 USC §§ 101/102/103/112**); **V.** the fundamental "**FSTP-Test**", capable of SPL testing **all** CIs resp. their Ses, hence embodying the Supreme Court's line of unanimous *KSR/Bilski/Mayo/ Myriad/Biosig/Alice* decisions; **VII.** the **1.)** alias *Mayo* quantification of S **VIII.** the **2.)** alias *Alice* quantification of S;

The 3 Screen Shots **IX.-XI.** and their Abstracts outline the 'Innovation Expert System, IES' functioning : in **IX.** that the FSTP-Test interactively generates for S, by executing its 10 FSTP-test.o and storing in the IES their outputs into 10 sets of 'arguable sub tests, **AST**s'; in **X.** that for any AST a set of 'user interface entities, **UIE**s' is automatically and/or interactively generated and calibrated (in the IES's calibration mode) such that any final UIE represents a "Legal Argument Chain, **LAC**". Any LAC is automatically resp. semi-automatically reproduced by an IES (in the IES's court mode, where it automatically screens all input it is capable of identifying for figuring out, which sets of LACs might actually be of interest in the court's discussion) under user control; in **XI.** what the evolutionary steps of the IES are. The colors in their headlines indicate the separate key ideas involved in such LAC derivations/generations/reproductions/controls.

Part of this tutorial has recently been presented at the 'Work in Progress on IP, WIPIP' conference in DC, run jointly by the USPTO and GWU, whereby this tutorial was focused, in its 20' slot only, on the double quantification of an ET CI – which explains its bias towards this new phenomenon achievable with ET CIs.

I. Principles of Quantifying a C(laimed) I(nvention)'s Inventive Concept

- This quantification is indispensable/optional for ET CIs resp. CT CIs.
- There are two principles of quantifying an ET CI, i.e. its total = generative compound "inventive concept, inC":
  - DISAGGREGATING it – by 35 USC §112 – into a conjunction of "atomic increments of ET CI's compound inventivity", any such increment hence being an "Inventivity Quantum"; their set is called ET CI's "Generative Set, GS" of elementary inventive concepts,.
  - On top of the first quantification: EVALUATING this Generative Set of Inventivity Quanta of ET CI's invention as a whole, by determining the values of ET CI's further decisive indicators of 35 USC §§ 101 & 102/103 – being the inCs' semiotic aspects – for checking their SPL satisfaction, too.
- Both quantifications are indispensable for translating *Mayo's/Alice's* wordings of "MORE THAN"/"ENOUGH"/… into rigorous (i.e. scientific) language, which then enables determining unquestionable properties of the so quantified ET CI – thus translating the *Mayo/Alice* requirements for an ET CI to satisfy SPL into precise thresholds.

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ABSTRACT OF I.

- The above survey slide provides a preview on the structure of what is explained in this Tutorial, i.e. its details are here not yet understandable. But, some notions may be clarified immediately.
- From *Alice* is known: An ET CI may be modeled by an inventive concept – more precisely: by a generative compound one, which is made up from a conjunction of atomic/elementary inventive concepts
- The wordings of *Mayo/Alice* comprise a series of decisive new – and in particular quantitative – terms, first of all "enough", "more than", … , due to their vagueness inviting troubles, uncertainties at least. Moreover, due to this vagueness, it also is impossible to introduce thresholds, although these would provide a basis on which uniformity/consistency in SPL precedents as to ET CIs may be achieved.
- This presentation shows which notions of an ET CI in post-*Mayo* SPL precedents are amenable to quantification – e.g. "inventive concept", "nonobviousness", "patentability", "noneligibility", "inventivity", …– and of what kinds these quantifications are. For them hence such thresholds may be introduced.
- From the particularities of any "emerging technology, ET" – intangibility/invisibility/fictionality – follows that virtually any ET CI is "model based", i.e. that construing the claim construction for an ET CI requires much more scrutiny than needed for a "Classic Technology Claimed inventions, CT CI", in particular as to all patent-eligibility/-ability exemptions.
- This implies that two kinds of ET CI quantifications contribute to determining the semiotics – i.e. the capability of meaning-making – of the Supreme Court's interpretation of 35 USC SPL and of ET CIs (in addition to this semiotics being of FFOL, usually not the model): Firstly ET CI's 1. §112 quantification by "elementary/atomic inventive concepts" and, based on this set, secondly ET CI's 2. §§ 101/102/103 quantification of ET CI's properties as a whole. If both quantifications succeed for an ET CI, it satisfies the 10 "elementary/atomic social concerns" encoded by 35 USC SPL.

II. A CI's eKNOW – eK-Kinds & eK-Representations & ETs

- "Patent eKnowledge" is the blue print of any precise eKnowledge as to any subject matter – such as medicine, transportation, security, nano tech, ….
- "Substantive Patent Law, SPL" grants inventors' "Intellect. Prop. Rights"
- The semiotics of "Patent eKnowledge" is (among others) **FINITE∧FOL!!!**
- eK-Kinds alias eK-Semiotics of a "Patent Practitioner":
  - **Legal kinds – patent laws/precedents, PTOs' other bodies' directives, … – CI indep.**
  - **"Technical" kinds – patents/ prior art/ posc, marketing/user/maintenance information, ...**
    For ET CIs this kind of information is dramatically different from CT CIs!!!!! – CI specific.
  - **Patent Business kinds – R&D, Prosecution, Litigation, Licensing, Marketing – CI specific.**
- Representations of any eK-Kind alias eK-Semiotics:
  - **documentRs – in any doc.i, as known from everyday life.**
  - **logicRs – to be marked-up in doc.i's as identified by the inventor/posc,**
  - **brainRs – showing what our brains do (though we don't know how),**
  - **LACRs – sequences of mixtures referring to the above eK-Kinds.**

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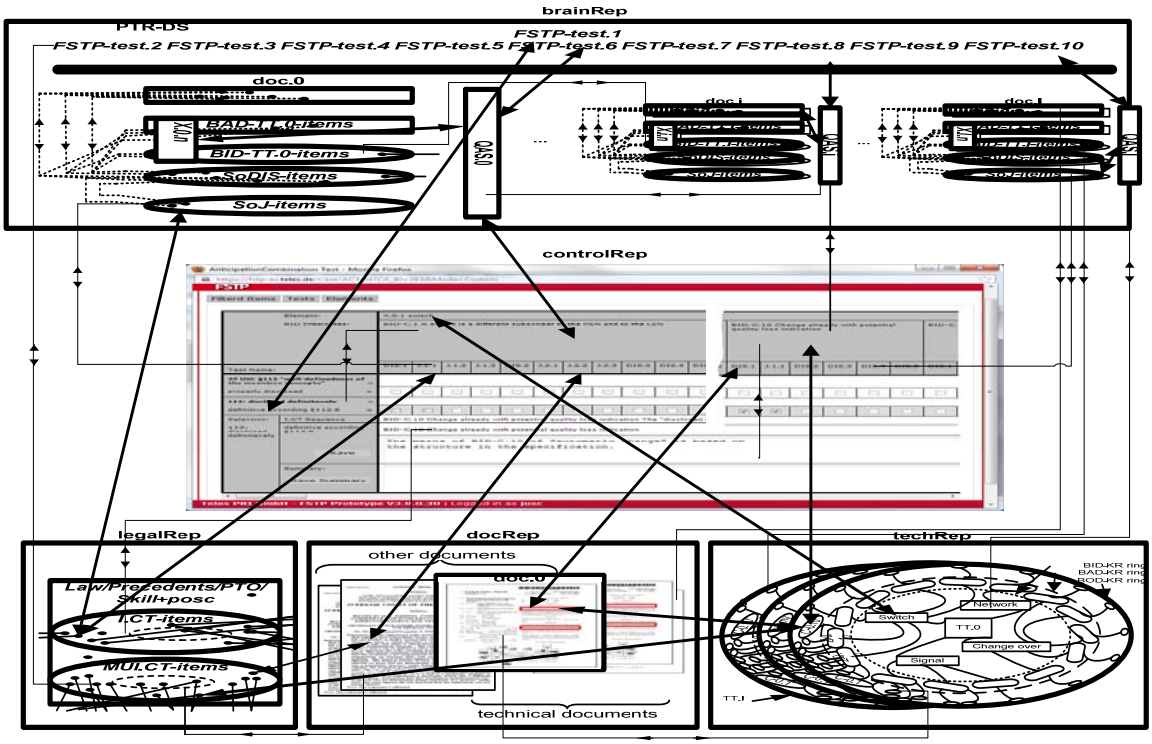
ABSTRACT OF II.

- Patents in general are very simple, allegedly precisely described, practical solutions of problems.
- As usual in engineering, they are of "first order logic" and even finite – both probably indispensable for making the patenting philosophy work.
- For designing a technology efficiently supporting patent professionals, distinguishing between 3 compound knowledge kinds is crucial – hitherto never distinguished in KR – namely: legal, "technical" (in its broadest sense), and business kinds of knowledge, the human categorization of which is here called its semiotics.
- By Bilski/Mayo/Alice the Supreme Court elaborates on categories/semiotics of invented "technical" knowledge subject to patent-eligibility exemption, i.e. it distinguishes between subcategories alias subsemiotics of the compound semiotics of "technical".
- Legal argument chains (LACs) – producible and reproducible in realtime by and "Innovation Expert System, IES" – then determine the eventually required kind and representation of knowledge, i.e. semiotics of the CI under SPL test. Any LAC is highly personalizable as to features of its legal and technical representation and other I/O features, starting from the resp. automatic LACs.
- Mathematical modeling provides the basis for the mathematical FSTP-Test outlined/used in IV-VII.
- The legal correctness of such an IES would be audited by PWC/EY/DT/… just as that of ERPs.
- The normal patent practitioner need not care for mathematical/technical "soundness" proofs of FSTP-Technology. But knowing some basics about the terms/notions syntax, semantics, pragmatics, and in particular semiotics (the science of "meaning making") simplifies understanding *Alice,* see first paragraphs in Wikipedia.

III. eK-Kinds: Tech./Legal/BIZ & eK-Reps: DocR/LogicR/BrainR



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ABSTRACT OF III.

- Above is shown a control screen shot (in the middle). Below the control screen shot, 3 screen shots model 2 different graphical representations of all kinds of eKnow. The middle screen shot models, by docRs, two "docR-stacks" of documents, the right stack models all technical documents, and the left stack all other documents – while the "legalR-stacks" in the right and left screen shots model, by legalRs, the logical structures of the peer documents in the two middle docR-stacks. Above the control screen shot, the large screen shot models, in its lower half, all info about the CI as "brainR-objects", all having quite similar internal structures, whereby any brainR-object represents all eKnow about any document in the 2 bottom docR-stacks, the by far most complicated one being the brainR-doc0 comprising TT0 – while its upper part indicates the outcome of executing the FSTP-Test on the CI.
- The LAC information is here graphically indicated on the bottom lines of the control screen shot. I.e., acoustic or other graphical info representation is not shown here. For other UIE info see V.
- The double headed arrows exemplify how the user may browse between eKKs, eKRs, and both.
- There are no such arrows modeling that the user may browse, also within one eKR, between its items.
- The brainR models all the relations known to the IES. It may be implemented as a sophisticated "linking structure" – not discussed here – of all items of other data structures contributing to implementing the IES, i.e. also between all items introduced in V-VI.
- The basic structure of the brainR of a CI's analysis/representation is determined by the FSTP-Test, see IV. I.e.: the brainR is automatically built-up, by FSTP Technique, such as to model, in any national patent system (which is just a parameter of the IES), not only the national flavor of its SPL but also its Highest Court's SPL precedents.
- The user interaction as to a CI under SPL test (by the FSTP-Test) – with the brainR of this CI built-up in the IES – is controlled by the UIEs (see IX./X).

IV. Structure of Testing a CI for Satisfying Substantive Patent Law (SPL)

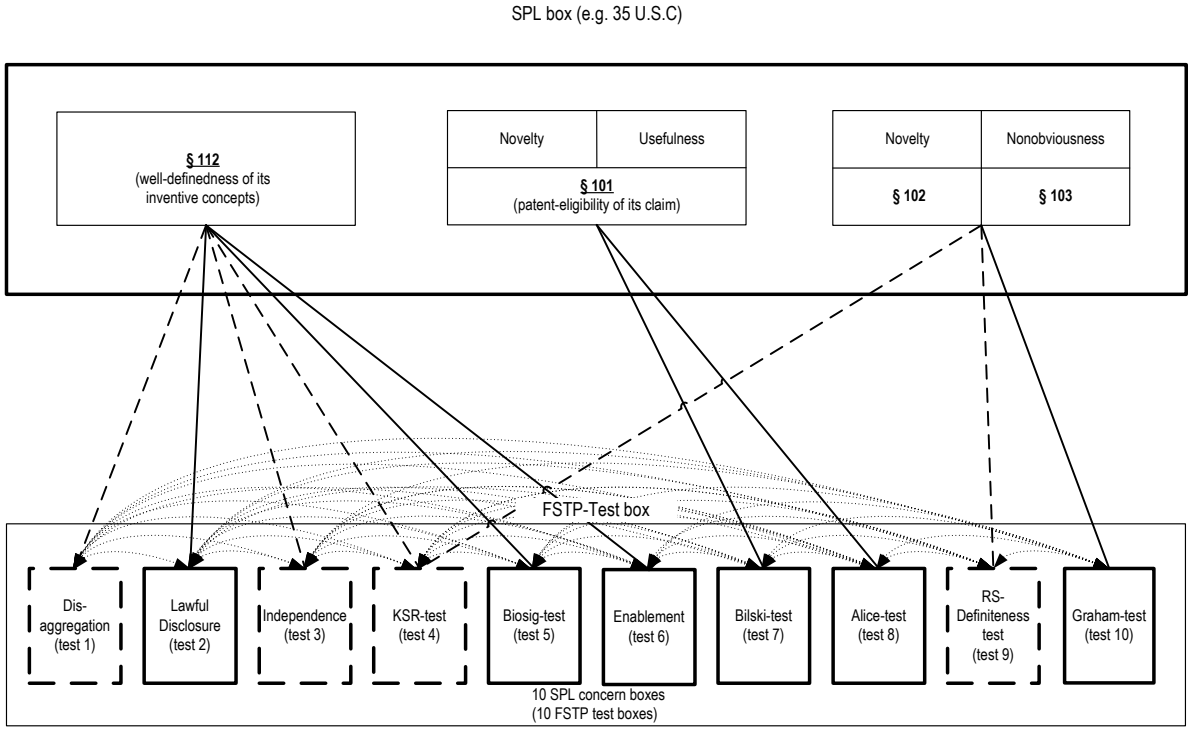

FIG 1

Bold lines show the classical claim construction's test.i's, dashed ones what Mayo/Biosig/Alice additionally require (refined claim construction). "←" show a "use hierarchy" among test.i's. "→" expand it to testi's total dependency.

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ABSTRACT OF IV. (TO BE SLIGHTLY ADJUSTED)

- The SPL_box, on top, shows the 4 Sections of 35 USC SPL, the requirements of which – they encode the society's concerns about granting temporary monopoles on innovations immediately after their creation for providing an incentive for marketing them quickly – must be met by the ET CI under SPL test.
- The FSTP-Test_box, at the bottom, shows the 10 concerns of SPL – see the FSTP-Test in V. – that these 4 Sections' requirements encode and which hence must be satisfied by the ET CI under SPL test.
- The FSTP-test.1/4/5/8 are not yet noticed by SPL precedents, but they are indispensable for ET CIs.
- The bold lines show what is tested (rudimentarily) by the classical claim construction for an ET CI.
- The dashed lines show what additionally must indispensably be additionally tested for an ET CI (more exactly) for its refined claim construction – due to an ET CI's invisibility/intangibility/fictionality.
- An optimal sequence of executing the FSTP-test.o is o=1,2,…,10.
- All tests must be executed for any set GS(ET CI) of inventive concepts generating this ET CI – of which usually a finite number of versions exist. Here is assumed (in V.) that just 1 GS exists, for simplicity. Even for a single GS – for brevity often just "S" – there may be several execution sequences for the FSTP-Test, as for several test.o there may be different justifications.
- If, for a test.o, one of its justifications does hold, this execution sequence may proceed to its next test.(o+1); if none of them holds (or there is no justification at all) this execution sequence is normally void – see the Abstract V – and the search for a completely executable execution sequence may be continued by e.g. backtracking in the just voided execution to a preceding test.(o-n), n=1,…,(n-1), in which an alternative justification (not yet involved in a preceding execution sequence) exists – for testing, whether the so identified alternative execution sequence may be completed successfully..By repeating this procedure, eventually one execution successful execution is found (which means the whole FSTP-Test is passed by the ET CI under SPL test), or all execution sequences are voided (which means the FSTP-Test is no passed by the ET CI under SPL test, i.e. this ET CI does not satisfy SPL).
- If this ET CI had several it generating S, i.e. it had several interpretations, any S must be processed..
- **If an ET CI passes the whole FSTP-Test, its patent-eligibility and patentability cannot be questioned. This ET CI is arbitrarily robust!!!**
- **If an ET CI passes the whole FSTP-Test, its being infringed by an ET CI* is easily, exactly, and non-deniably determinable. This ET CI is arbitrarily transparent!!!**

V. The *Mayo/Alice*-based FSTP-Test of a CI: Scientification of SPL-Testing

The **FSTP^{FFOLLIN}-Test** is a computer implemented method – defining also a system – for testing

- under a given Finite First Order Logic Legal Invention Norm, FFOLLIN, a given Claimed Invention, CI^{FFOLLIN}, which has a given interpretation TT0^{FFOLLIN}, represented by its Generative Set of TT0^{FFOLLIN}, S^{FFOLLIN},
- TT0^{FFOLLIN} – defined by $S^{BADFFOLLIN}$ ::= {BAD-crC0n^{FFOLLIN}/$\forall^{1\le n\le N}$} $\wedge$
  $\wedge$ $S^{FFOLLIN}$ ::= {BED-crC0kn^{FFOLLIN} | $1\le n\le N$: BAD-crC0n^{FFOLLIN}=$\wedge^{1\le kn\le Kn}$BED-crC0kn^{FFOLLIN}},

whether this FFOLLIN is satisfied by TT0^{FFOLLIN} alias S^{FFOLLIN},

- whereby FFOLLIN is defined to comprise a conjunction of 10 given **FSTP^{FFOLLIN}-test.o** of TT0^{FFOLLIN} alias S^{FFOLLIN}, i.e. $\wedge^{1\le o\le 10}$FSTP^{FFOLLIN}-test.o – for brevity in the sequel the index **"FFOLLIN"** being omitted, any FSTP-test.o abbr. by just "o", $1\le o\le 10$, and for $6\le o\le 10$ the stereotypic "over model and posc" omitted –

whereby the claimed invention for any TT0 prompts the CI's user to input to it

- the given information ■) ∀TT0-elements X0n of TT0, $1\le n\le N$, $\wedge$ ∀ binary abstract and elementary disclosed creative concepts of all X0n, BAD-crC0n resp. BED-crC0n ■) for |RS|>0 also ∀TTi-(dummy-)elements Xin peer to X0n, $1\le i\le I=|RS|$ $\wedge 1\le n\le N$, $\wedge$ ∀ binary abstract and elementary disclosed (dummy-) creative concepts, crCin, of all (dummy-)elements Xin, called BAD-crCin resp. BED-crCin, as well as ■) ∀ below justifications, by stepwise prompting,

i.e., for testing the S input to it as follows:

1)	(a) S^{BAD}::={BAD-crC0n $\|\forall^{1\le n\le N}\}$, S::={BED-crC0kn$\|1\le n\le N$:BAD-crC0n=$\wedge^{1\le kn\le Kn}$BED-crC0kn};		
	(b) justof$^{\forall 1\le n\le N}$:	BAD-crC0n is **definite**,	
	(c) justof$^{\forall 1\le n\le N\wedge\forall 1\le kn\le Kn}$:	BED-crC0kn is **definite** $\wedge$ ∀ patent-noneligible BED-crC0kn* are identified;	
	(d) justof$^{\forall S BADUS}$:	BAD-crC0n = $\wedge^{1\le kn\le Kn}$BED-crC0kn;	
2)	justof$^{\forall S BADUS}$:	sϵS $\wedge$ BAD-crC0nϵS^{BAD} are **lawfully disclosed**;	
3)	justof$^{\forall S BADUS}$:	**Independence-test passed**	S is well-defined&independent over model;
4)	justof$^{\forall S BADUS}$:	*KSR*-**test passed**	S is well-defined over posc;
5)	justof$^{\forall S BADUS}$:	**TT0's implementation by S is enablingly/lawfully disclosed**;	
6)	justof$^{\forall S BADUS}$:	*Bilski*-**test passed**	TT0 is non-preemptive;
7)	justof$^{\forall S BADUS}$:	*Alice*-**test passed**	TT0 is patent-eligible;
8)	justof$^{\forall S BADUS}$:	*Biosig*-**test passed**	TT0 is definite;
9)	justof$^{\forall S BADUS}$:	**RS-Definiteness-test passed**	RS is well-defined over TT0;
10)	justof$^{\forall S BADUS}$:	*Graham*-**test passed**	TT0 is patentable.

FIG 2:

The FSTP^{FFOLLIN}-Test, the passing of which is necessary and sufficient for a CI's TT0 satisfying SPL

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ABSTRACT OF V. (TO BE SLIGHTLY ADJUSTED)

The FSTP-Test's plcs-structure is expanded by its embedded pmgp-tests, as shown by FIG 2.

- The FSTP-Test structure comprises of 10 FSTP test.o, in total checking of a CI, whether it is patent-eligible and patentable. This is the case iff it meets all 10 concerns legally encoded by SPL, i.e. by 35 USC §§ 101/102/103/112. I.e.: iff this CI passes all the 10 FSTP test.o on a set S (see **test.1(a)**).
- It prompts the user to input, for this CI from doc0, first its elements X0n and their modeled compound inventive concepts BAD-X0n and as many elementary inventive concepts BED-crC0nk as it is able to identify, $1\le n\le N$, $1\le k\le K^n$, which defines CI's S (see the above simplification) – whereby the user also identifies all BED-crC0kn* being subject to a patent-eligibility exemption.
- *KSR*-test5 here is only indicative, may be trivially relaxed as needed by KSR – impacting on test10.
- *Biosig*-test6 is superfluous for a large class of CIs of FFOL, also comprising many ET CIs.
- RS-Definiteness-test8 must in principle take for any prior art document.i/TTi, if there is any, peer steps to those taken for doc0/TT0 in test1 – but practically this may be dramatically simplified.
- The society's SPL concerns as encoded by § 112 are checked by test.o, $1\le o\le 6$; those encoded by § 101 are checked by test.o, $7\le o\le 9$; those encoded by §§ 102/103 are checked by test.10.
- The FSTP-Test is the logically indispensable and hence canonical procedure for acquiring **all** technically and legally relevant information about a CI (based on user/posc input) – stored as its eKNOW in a data structure DS – such that **any** meaningful question about CI satisfying SPL can instantly be answered by it. This is the reason for the amazing reasoning capabilities of the IES.
- The final evaluation of any such quantitative answer is subject to a court's findings – but under much more scrutiny than under any other test discussed hitherto, e.g. the TSM or MoT tests. It namely is complete and all final checks of the FSTP-Test occur only on the refined/"rationality enabling" level of notional resolution. **But: A CI passing the FSTP-Test is legally extremely robust.**
- The FSTP-Test's black section shows the ET CI's first, its blue one its ET CI's second quantification.
- The FSTP-Test evidently is not an algorithm/program but an algorithm/program scheme.
- The FSTP-Test hence translates – by its two quantifications – the *Mayo/Alice* test into a precise, complete, and non-misinterpretable SPL test applicable to any ET CI, too (not only to CT CIs).

In other words: The FSTP-Test is the simplest operational implementation of the *Mayo/Alice* test.

VI. The Absolute Robustness of a Patent's Analysis by Scientific FSTP-Testing

Scientific patent analysis: Automatically guided & absolutely robustness warranting!!

THEOREM: *Any non-pathologic ET-CI may be upgraded – by using the FSTP-Test – to unassailable patent-eligibility & patentability & nonobviousness, i.e. to be* ***ABSOLUTELY LEGAL ROBUST****.*

Depending on the creativity effort invested in what parts and to what extent, the scope(ET-CI) would thereby vastly controllably shrink resp. grow.

D.1: $S^R ::= \{\forall s^{Rv}\} ::= \{\forall <s^{Rv1} \epsilon TS(s^1),..,s^{RvK} \epsilon TS(s^K)>\}$ is called "TT0-**REALIZATION SET**" iff $\forall s^{Rv}$ the "**s^{Rv}-embodiment, TT0^{sRv}**" is disclosed by TT0's specification.

D.2 "**SCOPE(TT0)**": S^R is called "**scope(TT0)**" resp. "**scope(CI)**".

D.3 "**TT0' = TT0**"[4.b)]: A TT0' is called to be "**equal, '='**" to TT0 iff $S'^R = S^R$.

D.4 "**TT0' ϵ SCOPE(TT0)**"[4.b)]: A TT0' is called to "**belong to scope(TT0)**" iff TT0' passes the FSTP-Test ∧ $S'^R \subseteq S^R$.

D.5 "**TT0' VIOLATES TT0**" A TT0'∉SCOPE(TT0) is called to "**violate**" TT0 iff $S'^R \cap S^R \neq \Phi$.

D.6 "TT0 IS **DEFINITE**"[4.d)]: A TT0 is called "**definite**" iff it passes the FSTP-Test.

D.7: Induced by *Mayo* let, for a TT0's CI-element, the term "**improvement-prone**, **ip**" denote a new "property **category**" for its inC(s), modeled as its(their) "ip-inC(s)". Compared to such an inC, its new ip-inC property is: It is already 'visible' that it will "improve" in its domain and/or its TS, no matter whether predictably in time or not.

D.8: For an sϵS and an s^o let be defined ■) the relation "**s^o>s**" iff domain(s) = domain(s^o) ∧ TS(s^o)\TS(s)≠Φ, and ■) as meaning of "s=ip" to be that s is an "ip-inC".

D.9: "**PREEMPTIVITY**" by *Bilski*: TT0 is called "**preemptive**" iff ∃TT0'≠TT0 passing the FSTP-Test: scope(TT0')∩scope(TT0)≠Φ ∧ ∃kϵ[1,K]: ($s'^k > s^k$) ∨ (s^k=ip).

D.10: "**ABSTRACT IDEA**" by *Bilski*: TT0 is called an "**abstract idea**" iff ∃TT0'≠TT0 passing the FSTP-Test: scope(TT0')∩scope(TT0)≠Φ ∧ ∃kϵ[1,K]∄k':($s'^k > s^k$) ∧ ($s^{k'}$=ip)[5.d)].

D.11: Induced by *Alice,* let for an ip-TT0 the term "**transformation-warranting**, **tw**" denote another **category** of its ip-CI-element/s' properties, modeled by "tw-inC/s" tying its ip-inC/s into a user-application, so transforming this ip-TT0 into patent-eligibility.

D.12 "**PATENT-ELIGIBLE**" by *Alice*: An ip-TT0 is called "**patent-eligible**" iff $\exists\{k^*\} \subset [1,K]$: $\wedge^{\forall k \epsilon [1,K]}$BED-crC0k≫$\wedge^{\forall k \epsilon [1,K]\setminus\{k^*\}}$BED-crC0k, whereby the "≫" has the meaning "{k*} transforms the latter conjunction into a user-application".

D.13: For an ip/tw-CI, let "**scope(ip/tw-CI)**" be the modification of the S^R of the original CI as it results from the modifications of the domains and TSes of this original CI's inCs, first by its ip-inCs, making this ip-CI preemptive, and then by its tw-inCs, making this **ip/tw-CI** a nonpreemptive user-application.

D.14: Let the meaning of the relation "**substantially more than**, ≫" between an ip/tw-CI and its ip-CI be: "The ip/tw-CI's tw-inC(s) eliminate the preemptivity created by its ip-inC(s) by modifying their domains and/or TSes such that any ip-inC is defined only for and this ip-CI is transformed into a user-application ip/tw-CI of its tw/ip-inC(s)".

VII. The inC Quantification Implied by *Mayo*, Modeled by the FSTP-Test

test1 The FSTP-Test prompts the user to input <no "**multi-interpretable CI**", i.e. ∃1 S only [150,58]>
- **(a)** ∀TT.i ∧ 0≤i≤I=|RS| ∧ 1≤n≤N : ∀ BAD-crCin of TT.0;
- **(b)** ∀1≤n≤N justof: BAD-crC0n is **definite** <see [150,137]>
- **(c)** S::={BED-crC0kn|1≤n≤N: BAD-crC0n $^{duc=}$ ∧$^{1≤kn≤Kn}$BED-crC0kn ∧ ∀nk* are identified };
- **(d)** ∀1≤kn≤Kⁿ ∧ 1≤n≤N justof: BED-crC0kn is **definite**;

test2 ∧ ∀ ϵ S for justof: their **lawful disclosure**;
test3 ∧ ∀ ϵ S for justof: their **enablement of TT.0**;
test4 ∧ ∀ ϵ S for justof: their **independence**; <see [150,137]>
test5 ∧ ∀ ϵ S for justof by *KSR*-**test: S ∩ (posc ∪ RS) = ∅**; (without "cherry picking") <see [150,137]>
test6 ∧ ∀ ϵ S for justof by *Biosig*-**test: S is definite**; <see [150,151]>

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ABSTRACT OF VII. (TO BE SLIGHTLY ADJUSTED)

- To begin with: For a given ET CI, neither a compound nor an elementary/atomic inventive concept of it – involved in this ET CI's test whether it satisfies SPL – needs to be explicitly used by the claim's wording of this ET CI. It suffices that it, including its meaning, is disclosed for the posc by the ET CI's specification. I.e.: *Mayo/Biosig/Alice* concur that the inC(s) of an ET CI, under test for satisfying SPL, is(are) to be those created by the inventor of this ET CI when inventing it, as disclosed by its patent. Hence, this question for the ET CI's inventive concepts – on the BAD and BED level of notional resolution – must be answered, first and by the posc (as derived from this ET CI's specification of the patent comprising it) before they can be input to the FSTP-Test, when it prompts for them in test1.
- As an ET CI having allegedly passed the FSTP-Test is vulnerable only by its pragmatics (= input to it by the user, see V.), it provides an excellent basis for structuring SPL precedents administration as indicated by *Pullman/Markman/Teva* – in particular, as it quotes **all** potential pragmatic errors. Its most recent *Cuozzo* decision seems not to be applicable, here, as referring to the USPTO's rights in IPRs, not in SPL, though this may require reconsideration.
- test1-6 hence iteratively prompt the user: for inputting all these inventive concepts and for justifying the disaggregation of BAD-inCs into conjunctions of BED-inCs, just as their definiteness, just as their independence, … – all as input before. In the general case several by an inC differing TT.0s alias S alias GS(ET CI) got to be maintained. Automatically generating/checking justifications is ignored here.
- **Any S** – having passed test1/2/3/4 – **represents a *Mayo* quantification of ET CI** into its |S| atomic/elementary inventive concepts.

  The notion of "inventivity quantification" of FSTP-Technology is strongly similar to that of "energy quantization" known from Elementary Particle Physics alias Quantum Mechanics, but SPL precedents did hitherto not define a smallest inC – though, if possible, this evidently would make sense.

  FSTP quanta by definition carry semiotics, unknown in Physics, which also knows only a single quantum, the "h" (Plank's constant, the minimal energy required for generating a physical action). I.e.: The FSTP notion of "inventivity-quantum" kind of generalizes the Physic notion of "energy-quantum".
- Without going into detail, the responsibility of this initial part of the FSTN-Test is to assess that
  - all BAD-inCs and BED-inCs meet, separated into sets S, all requirements basically of § 112.
  - the subsequent test7/…/10 have per S an unquestionably clarified basis for their executions.

VIII. The inC Quantification Implied by *Alice*, Modeled by the FSTP-Test

test7 ∧ for S justof by ***Bilski*-test**[i] : **S is non-preemptive**; <see [150,137]>
test8 ∧ for S **RS-Definiteness test**: by defining BED*-AN matrix by BED*-inCik ::= N ∀ 1≤n≤N ∧ 1≤k≤K^n ∧ 0≤i≤I;
BED*-inC0k ::= A if BED-inC0k ϵ posc; <see [150,137]>
BED*-inCik ::= A if BED-inCik = BED-inC0k, 1≤i≤I;
test9 ∧ for S justof by ***Alice*-test:** **S is patent-eligible** if ∃nk*ϵ[1,N]X[[1,max{K^n}] :∧$^{\forall nk\epsilon NK \backslash nk^*}$ BED-crC0nk≫∧$^{\forall nk\epsilon NK \backslash nk^*}$ BED-crC0nk;
test10 ∧ for S justof by ***Graham*[ii]-test**: **S is patentable**; <see [150,137]>

i) The **"*Bilski*-Test"** – testing TT0 for not being preemptive, as of *Alice* – prompts the user for input&justof:
VII. ∃nk*ϵ[1,N]X[[1,max{K^n}] : ∧$^{\forall nk\epsilon NK \backslash nk^*}$ BED-crC0nk ≫ ∧$^{\forall nk\epsilon NK \backslash nk^*}$ BED-crC0nk is **definite**; <nk*ϵ 1,N]X[[1,max{K^n}] has appl. semiotics>
VIII. If enlarging TT0's truth set alternatively its scope [58], **1)** does not hold. <If 1) & 2) apply, then TT0 is "not an abstract idea", hence not preemptive [151,137]>

ii) The **"*Graham*-Test"** – determining the semantic height of TT0 over RS – works with all non-cherry-picking, i.e. element-wise, "anticipation combinations, ACs" of RS as to S [5,6,7,11]:
1) It starts from the "anticipation/non-anticipation, AN" matrix of FSTP-test.8, any one of the I+1 lines of which shows, by its K column entries for any i = 1,2,...,I, which of the peer TT.0 entries is anticipated/ non-anticipated by the i-line one, and for i=0 is anticipated/non-anticipated by posc.
2) It automatically derives from the AN matrix the set {∀ACs} with minimal Q^{pmgp} of "N" entries [5,6].

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ABSTRACT OF VIII. (TO BE SLIGHTLY ADJUSTED)

- Evidently, the preceding post-*Mayo* quantification of an ET CI – in VI. – tests only ET CI's satisfying § 112, more precisely: of ET CI's single set GS(ET CI) alias S alias TT0. If |{GS(ET CI)}| > 1, i.e. if ET CI has several interpretations alias Ses, the preceding statement holds for any S.
- Testing ET CI's satisfying also § 101/102/103 occurs above, and for all S of ET CI satisfying § 112.
- Thereby the question arises, under which conditions such an S and such an S', S≠S', represent the same invention resp. different inventions – momentarily not yet clarified.
- By contrast to the preceding *Mayo* quantification – in VI. – by more than 7 x |S| x |{GS(ET CI)}| (sub) tests, the above *Alice* quantification comprises only the test8-10, i.e. 3 FSTP-subtests.
- By contrast to the quantification provided by (the subtests of) test1-7, which deliver only T/F values, the test9-10 may deliver scaled values, e.g. natural numbers, identifying the degree of patent-eligibility, of novelty, and of obviousness.
- The semiotics of SPL and all its precedents is determined to be of FFOL.
- The semantics of SPL and all its precedents, here called "patent law carrying semantics, plcs" is encoded by the structure of the FSTP-Test (semiotically put: by its syntax).
- The pragmatics of SPL and all its precedents, here called "patent monopoly granting pragmatics, pmgp" is encoded by the input to the FSTP-Test (semiotically put: by its model/symbol).
- Of particular interest in the *Alice* test – and prior to it in the *Bilski* test – that the ET CI resp. its S may contain a BED-inC*, the crC* part of which, above identified by its index nk*,
  - represents/models an abstract idea and/or a natural phenomenon, and
  - carries a semantics and pragmatics vastly independent of the semantics and pragmatics carried by the crCs of S\BED-inC*.

  How to quantify the degree of this "semiotic independence" of BED-inC* from S\BED-inC* is currently being researched on and should shortly be published [91].

  If no such BED-inC* exists, then the *Alice* test is defined to be meaningless and superfluous.

IX. SE.-AUTOM. GEN. of a CI by FSTP-TEST ALL eKNOW and ASTs

The whole (ET) CI FSTP-Test ::= $\wedge^{1\le o\le 10}$FSTP-test.o reads: **All "<>" refer to the FSTP Reference List**

test1 The FSTP-Test prompts the user to input <no "**multi-interpretable CI**", i.e. $\exists$1 S only [150,58]>

(a) $\forall$TT.i $\wedge$ 0≤i≤I=|RS| $\wedge$ 1≤n≤N : $\forall$ BAD-crCin of TT.0;

(b) $\forall$1≤n≤N justof: BAD-crC0n is **definite**; <see [150,137]>

(c) S::={BED-crC0kn | 1≤n≤N : BAD-crC0n = $\wedge^{1\le kn\le Kn}$BED-crC0kn $\wedge$ $\forall$nk* are identified};

(d) $\forall$1≤kn≤K^n $\wedge$ 1≤n≤N justof: BED-crC0kn is **definite**;

test2 $\wedge$ $\forall$ ϵ S for justof: their **lawful disclosure**;

test3 $\wedge$ $\forall$ ϵ S for justof: their **enablement of TT.0**;

test4 $\wedge$ $\forall$ ϵ S for justof: their **independence**; <see [150,137]>

test5 $\wedge$ $\forall$ ϵ S for justof by *KSR*-**test:** **S $\cap$ (posc $\cup$ RS) = $\emptyset$** (without "cherry picking") <see [150,137]>

test6 $\wedge$ $\forall$ ϵ S for justof by *Biosig*-**test:** **S is definite**; <see [150,151]>

test7 $\wedge$ for S justof by *Bilski*-**test**[i]: **S is non-preemptive**; <see [150,137]>

test8 $\wedge$ for S **RS-Definiteness test**: by defining BED*-AN matrix by BED*-inCik ::= N $\forall$ 1≤n≤N $\wedge$ 1≤k≤K^n $\wedge$ 0≤i≤I;
BED*-inC0k ::= A if BED-inC0k ϵ posc; <see [150,137]>
BED*-inCik ::= A if BED-inCik = BED-inC0k, 1≤i≤I;

test9 $\wedge$ for S justof by *Alice*-**test:** **S is patent-eligible** if $\exists$nk*ϵ[1,N]X[[1,max{K^n}] :$\wedge^{\forall nk\epsilon NK}$BED-crC0nk>>$\wedge^{\forall nk\epsilon NK\backslash nk^*}$ BED-crC0nk;

test10 $\wedge$ for S justof by *Graham*[ii]-**test**: **S is patentable**; <see [150,137]>

i) The **"*Bilski*-Test"** – testing TT0 for not being preemptive, as of *Alice* – prompts the user for input&justof:
IX. $\exists$nk*ϵ[1,N]X[[1,max{K^n}] : $\wedge^{\forall nk\epsilon NK}$BED-crC0nk>>$\wedge^{\forall nk\epsilon NK\backslash nk^*}$ BED-crC0nk is **definite**; <nk*ϵ 1,N]X[[1,max{K^n}] is appl. Semiotics>
X. If enlarging TT0's truth set alternatively its scope [58], **1)** does not hold. <If 1) & 2) apply, then TT0 is "not an abstract idea", hence not preemptive [151,137]>

ii) The **"*Graham*-Test"** – determining the semantic height of TT0 over RS – works with all non-cherry-picking, i.e. element-wise, "anticipation combinations, ACs" of RS as to S [5,6,7,11]:
3) It starts from the "anticipation/non-anticipation, AN" matrix of FSTP-test.8, any one of the I+1 lines of which shows, by its K column entries for any i = 1,2,...,I, which of the peer TT.0 entries is anticipated/ non-anticipated by the i-line one, and for i=0 is anticipated/non-anticipated by posc.
4) It automatically derives from the AN matrix the set {$\forall$ACs} with minimal Q^{pmgp} of "N" entries [5,6].

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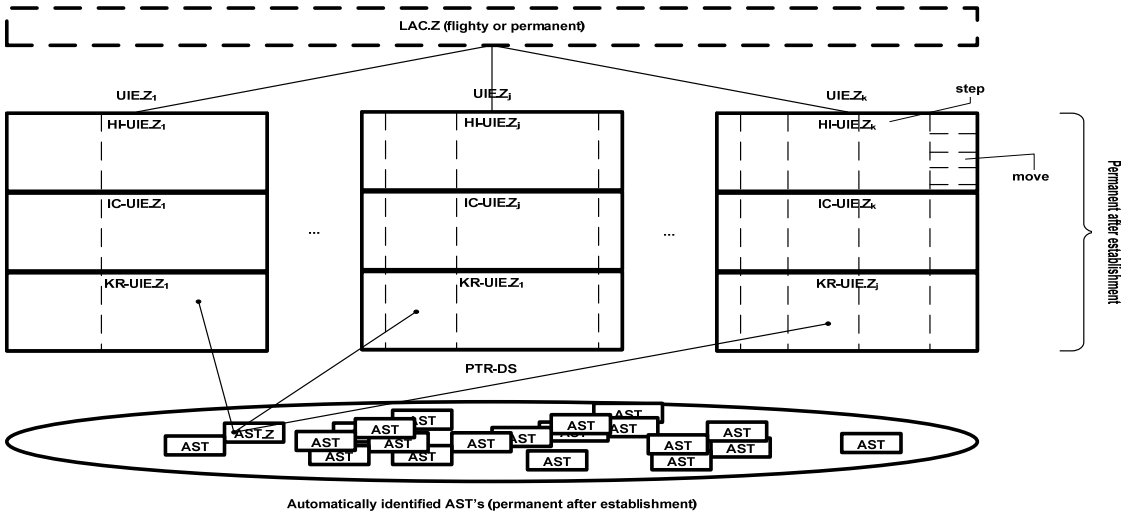
ABSTRACT OF IX.

- The in/output of executing the FSTP-Test on an ET CI is located in the IES as part of its DS.
- Once more: The FSTP-Test is the canonical procedure for acquiring **all** technically and legally relevant information about a CI (based on user/posc input), stored as part of its eKNOW in the DS.
- How the DS of a CI's FSTP-Test, i.e. of a CI's SPL test, is interrelated to the IES user – i.e. invoked/controlled/configured/annotated/…/used by it – is explained in X/XI.

X. AUTO./S-AUTO. DER./GEN. from ASTs by UIEs into ALL LACs



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ABSTRACT OF X.

- The above data structure is stored on top of the DS, i.e. uses it. The ellipse, at the bottom, shows all the ASTs automatically derivable from the DS generated/stored by the user's execution of the semi-automatic FSTP-Test in explorative mode on the CI at issue (see III), whereby both data structures have the brainR indicated in II.
- In addition, the IES may comprise a set of q/a's, called QAS – expandable by the IES user for a specific CI or generally – i.e. stereotypically resp. individually related to the justifications of the FSTP-Test. Such set(s) is(are) used by the IES to prompt the user, in both modes, for control input.
- Any "User Interface Entity, UIE.z" is generated when configuring, by the IES user, the realtime presentation(s) of any AST.z – here the user configured for AST.z 3 different presentations.
- The functions available to the user for generating UIEs and then invoking/controlling them – during IES calibration and/or IES's LAC(s) reproduction – are not subject of this paper (but see V). Most IES functions for its "calibration"/"configuration"/"comfort" mode, few for its "engagement"/"combat"/"court"/"realtime" mode alias operation may, on request by an IES user, work step/stream wise, also overlapping, also user specific, ….
- Any UIE.z consists of 3 functional modules invoked by the user: ●KR-UIE.z for accessing an AST.z at IES calibration identified by the user, ●HI-UIE.z for inputting at IES calibration the argchain derived from AST.z (by the user or automatically, thereby the multimedia representation of this LAC may also be determinable by the user or not) and for outputting at IES realtime operation this LAC (as configured, which may mean "as then stored" or "as dynamically generated", both represented by the dashed box at the top of FIG 1), and ● IC-UIE.z for the "interconnection control" of this LAC presentation at IES realtime operation to the user, to an observer, to another presentation of the same AST.z, to another LAC.y, to steps therein, … (to be configured at calibration by the user).

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XI. AUTO. SEL.-/REPRODUCTION of LACs by UIEs for CI's SPL-Proof

The below ladder of work items on the IES shows its increasingly powerful capabilities, its "high end" as of science fiction, its "low end" going online early next year, its rungs not necessarily consecutively provided.

a) *Default graphics input prompting* through *all FSTP-test.o and QAS.*
b) Graphics*/Acoustic* input prompting *as in a).*
c) Input prompting as in a)/b) for *expanding QAS and use as there.*
d) *User forward controlled IES responsitivity/interaction* as in a)-c).
e) *Dynamic user controlled IES responsitivity/interaction* as in a)-d).
f) *Realtime control* as in a)-e).
g) *Personalizable control* as in f).
h) *User counseling* beyond c) as in f): Self-inflammable/-catalytic IES, HAL

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ABSTRACT OF XI.

- In c) and h) the IES may leverage on contextual information of various kinds provided by the user, e.g. R&D control [137], not discussed in this paper.
- In a)-c) the prompted input provided by the user selects the LAC to be reproduced and describes all parameters of this reproduction – thereby it would be vastly guided, potentially interactively, by IES default libraries, also potentially expandable by the user.
- In d) the user inputs a description, using a notation being an expansion of the one used in a)-c), of the sequence of such a)-c) inputs to be processed automatically by the IES, potentially enabling limited IES/User interactions as in a)-c).
- In e) the user is enabled to dynamically restructuring the automatics of the IES ahead as planned.
- In f) the user is enabled to anytime fully dynamically restructuring the automatics of the IES ahead.
- In g) several users may control the IES simultaneously as needed by them, thereby potentially synchronizing them or forcibly being synchronized, at predefined sync-points in predefined sync-operations, or the former and/or the latter being dynamically controllable by predefined or dynamically determined user.
- h) is far ahead and need not yet be described, here – though its capacity should be evident already.
- In a Patent IES, all its CI independent information may already carry its audited MUIs.
- Also MUIs to be provided by the inventor/posc are vastly stereotypic – once the invention's inventive concepts are identified – as then the FSTP-Test prompts the user through the complete check whether a CI satisfies SPL. This enables the creativity mentioned in c) and h).
- All the information eventually output by the IES in engagement mode is input before in calibration mode by an IES user – i.e., is already marked-up (by MUIs), or marked-up and linked, or marked-up and later linked during calibration by a user. This applies to all KRs of any information.

post-*Mayo/Biosig/Alice* – The Precise Meanings of SPL Terms for ET CIs[1.a)]

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I. THE post-*Mayo/Biosig/Alice* REFINED NOTIONS OF SPL PRECEDENTS FOR ET CIs

This paper precisely defines the new and fundamental notions[1.b)2.a)] that the Supreme Court unanimously introduced into SPL precedents for ET CIs by its *KSR/ Bilski/Mayo/Myriad/Biosig/Alice* line of decisions, i.e. of the terms "scope"/"definiteness"/"preemptivity"/"natural phenomenon"/"abstract idea"/"categories of patent-noneligibility". Hitherto, none of these notions is precisely understood, making SPL precedents on ET CIs error prone – see recent CAFC decisions [163], broadly criticized by patent experts' statements at the USPTO event on patent quality [193].

FIGs 1&2 are key for grasping the many strong interdependencies SPL imposes on these notions: Any one of them is defined only if all notions it "uses" are[2.b)]. A statement on one of these notions and ignoring such an interdependency is flawed. The intricacy of the crucial notion "abstract idea" will be made evident. In total, for the first time all these notions will be precisely defined – enabled by the Supreme Court's above line of decisions – and any question about any notion clearly answered.

FIG 1: The Subtests Used in the Classical and in the Refined Claim Construction
FIG 2: The Semi-Automatic FSTP^{FFOLLIN}-Test of a CI's TT0 – required for ET CIs.

As to [183], FIG 1 is left unchanged and FIG 2 only slightly refined[2.a) 3.a)].

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1 **a.** SPL = Substantive Patent Law = 35 USC §§ 101/102/103/112; ET/CT = Emerging/Classic Technology; CI = Claimed Invention; NPS = National Patent System. This paper continues [183], not considering these notions in any other context, and in particular not "per se"/"as such", as this were totally irrational.
.b A "term" is an "identifier/name". A pair <"term", its "meaning"> is called the term's "notion".

2 **.a** All notions are defined, for a TT0, by **1.)** assuming it had passed the whole FSTP-Test, **2.)** deriving these TT0 notions' precise meanings (in mathematical KR) from the so achieved TT0 presentation by its BAD/BED-inCs [183]. Without **1.)**, these notions are only "indicative"/"intentional", i.e. not defined/-able.

In Physics it is usual to perform such "retrospective"/"fiction based" definitions: There – for finding out what a system's properties in its equilibrium state are – one always **1.)** assumes it had already reached the equilibrium state, **2.)** determines, in this state, relations between its constituents. Taking a TT0 as being the analogon to a physical system, its analogon to the latter's **α)** equilibrium state is that it has passed the whole FSTP-Test, i.e. satisfies SPL, and **β)** relations between its constituents are TT0's relations between its inCs and these notions. An even closer such analogon – as also "sub-Physics", just as SPL notions, "SPL loaded" instead – exists in Mathematics' foundation, i.e. in Measure Theory [191].

While here all above notions are defined by assuming the BAD/BED-inC instantiations were known, in a specific TT0's SPL test they are needed. This usually will require reiterating the determinations of all these instantiations until they all are consistent. Thereby not only the currently performed claim construction is readjusted but even the claim interpretation preceding it [183]. Also the refinements alias disaggregations/decompositions may be reiterated. In Section II the notions of "Realization set, S^R" of a "Generative Set, S" of a TT0 show: Without reiterating S and S^R for a TT0 – and relating them to the meanings of the above notions – this consistency is hardly achievable.

.b There is not only a "use-hierarchy" – defined by David Parnas [122] – between the FSTP-testi's, as it here is reasonably assumed for efficient execution of the FSTP-Test. The reason being: SPL also imposes the inverse relation on these testi's: Thus, for the above notions defined by the test.i's, SPL (in the Supreme Court's interpretation by its above line of decisions) clearly implies[2.a)] that, for a TT0, "any of these notions is defined only if all such notions are defined", too – explaining why one cannot prove FSTP-testi's holding independently of ∀ FSTP-testi^o's holding, $1 \le i^o, i \le 10$, repeatedly reminded of below.

II. PRECISELY DEFINING THE NOTIONS OF "SCOPE" & "DEFINITENESS"

While the ambitions of the FSTP-Project in total reach out very far – at developing an extremely powerful IES [161], for which an in SPL precedents hitherto unknown/non-practiced notional preciseness is indispensable – here this preciseness is introduced and its implied necessary subtlety of reasoning is explained. This is done by means of the FSTP-Test, FIG 2, also being the backbone of the IES.

The following elaborations on SPL encounter legal questions – below identified by "**(!!)**" and not yet settled by SPL precedents, as not so precise about these new notions – which must be answered for ET CIs here for not getting blocked by them. These answers should be in line with the Supreme Court's above decisions[3.a)].

The FSTP-test1 prompts the user to input, for CI/TT0[2.c)] from doc0, ■) its "CI-elements, X0n" , 1≤n≤N, ■) their by mathematical predicates modeled compound inventive concepts BAD-crC0n, ■) as many elementary inventive concepts BED-crC0nk as it is able to identify[2.a)] $1\leq kn\leq K^n$, $K::=\sum^{1\leq n\leq N}K^n$, which define CI's sole[2.c)3.a)] set $S=\{s^k \mid 1\leq k\leq K\}$ – therein identified all BAD-crC0n* & BED-crC0kn* subject to a patent-noneligibility exemption – and ■) all justifications prompted for on lines 1)(b)-4) in FIG 2. After clarifying the above quoted notions, the RS and FSTP-test9/10 –though relevant[2.b)] – no longer need additional clarification, here [182].

D.1: $S^R::=\{\forall s^{Rv}\}::=\{\forall<s^{Rv1}\epsilon TS(s^1),..,s^{RvK}\epsilon TS(s^K)>\}$ is called "TT0-**REALIZATION SET**" iff $\forall s^{Rv}$ the "**s^{Rv}-embodiment, $TT0^{sRv}$**" is disclosed by TT0's specification.[2.a)3.c/d)]

LEMMA: For TT0 – by the independency of its BED-inC0kn by FSTP-test3 – holds $S^R \cong \prod^{\forall sRv} s^{Rv} \cong^{3.c)} \prod^{1\leq k\leq K} TS(s^k) \cong \prod^{1\leq n\leq N \wedge 1\leq kn\leq Kn} TS(BED\text{-}inC0kn)$.

---

3 **.a** But these also are the simplest answers – hence, potentially too rigorous in practical cases. As soon as ∃ precedential decisions, deviating from this rigor, the following definitions may need marginal modifications – fortunately changing nothing of principal significance, as recognizable today already[3.a)v.].

Five notes concerning abbreviations (used below as already in [183]) and the precision ahead:

i. The index "FFOLLIN" is omitted here, as in the FSTP-Test after its preamble. But it should be kept in mind: The below insights apply to many other Intellectual Property Laws/Regulations, too.
ii. Throughout this paper is assumed, a CI has just 1 interpretation/"Generative Set, S"/TT0 [58]. This restriction may be dropped by applying the FSTP-Test to all finitely many TT0s alias S's of CI.
iii. Some sloppy wordings of [183] are fixed. Note also: Talking about TT0' assumes TT0 ∃ already.
iv. For preciseness, definitions – abbr. by **D.i**, i=1,2,… – use (basic) Mathematics.
v. Independently of risks with future SPL precedents, scientifically the here defined answers are well defined and hence will prevail – potentially identifying the difference to SPL precedents.

.b FOL enables: $\forall n\epsilon[1,N] \wedge \forall k\neq k'\epsilon[1,K^n]$ holds BED-inC0kn≠BED-inC0k'n. Also the simplification is assumed that, if ∃ several BED-inC instantiations in a s^{Rv}, they all have the same value. Due to all sets' finity, all such[ii.] simplifications are removable by expanding the FSTP-Test to remain exhaustive.

.c By appropriate inC limitations, the set equality "≅" may be preserved also if some s^{Rv}'s are not disclosed, i.e. are $\notin S^R$ – whereby this reduced S'^R evidently represents a TT0'≠ TT0[6.a)], see **D.2-D.5**. I.e.: In spite of the independency of TT0's BED-inCs[2.a)], the definitions of their TSes may impact on each other.

.d Analogous terms/notions S'^R, s'^{Rv}, $\prod^{1\leq k\leq K} TS(s'^k)$ are used also for a TT0', which need not pass the FSTP-Test (e.g. because there is no TT0-alike TT0' specification or inC definition), i.e. for which only little of TT0 holds – whereby in any **D.i** its TT0' notions are used like TT0 notions.

D.2 "**SCOPE(TT0)**": S^R is called "**scope(TT0)**", resp. "**scope(CI)**" iff ∃ only 1 TT0[3.a)].

This is the first time that this fundamental notion of SPL – the scope of a TT0 – is **precisely** defined. Hitherto, namely nobody had developed the notion of a TT0's "realization set"[D.1], being its "**protected embodiments set**" – decisive for TT0's alleged infringement[D.5]. If for an s^{Rv} the TT0 specification discloses of the resp. $TT0^{sRv}$ for the posc no enablement, then it is impossible to justify in FSTP-test3 this S satisfies SPL – as this were the just indicated legal error – and measure[3.c)] is to be taken.

In "classical" claim interpretation/construction [183] thus hitherto a legal deficiency was principally absolutely unavoidable: To assess TT0's enabling disclosures by its specification not of all but just of a few TT0 embodiments – assuming the posc then would understand them all, without being capable of saying, what for TT0 exactly this "all" would comprise!!! This question arises in any infringement dispute and could hitherto never be answered precisely – **quite principally**!!!

This also caused the "overclaiming" problem of a CI – meaning that its claim is disclosed "overbroad", thus being strong in talking a similar invention into infringing it, but untenable in its defense against its nullification as deficient as to its complete enablement. This now is easily avoidable by obeying: scope(CI) = $\{\forall\ TT0^{sRv}\}$[3.c)].

Legally, S^R(TT0) is the scope of TT0's protection by patent law if and only if ("**iff**") TT0 has passed the complete FSTP-Test[2.a)] – otherwise scope(TT0) is not defined at all, and there is no protection for TT0 by patent law. [2.a)4.a)].

D.3 "**TT0' = TT0**"[4.b)]: A TT0' is called to be "**equal**, **'='**" to TT0 iff $S'^R=S^R$.

D.4 "**TT0' ϵ SCOPE(TT0)**"[4.b)]: A TT0' is called to "**belong to scope(TT0)**" iff TT0' passes the FSTP-Test ∧ $S'^R \subseteq S^R$.

D.5 "**TT0' VIOLATES TT0**" A TT0'∉SCOPE(TT0) is called to "**violate**" TT0 iff $S'^R \cap S^R \neq \Phi$[4.c)].

D.6 "TT0 IS **DEFINITE**"[4.d)]: A TT0 is called "**definite**" iff it passes the FSTP-Test.

Finally: from **D.4** ∧ **D.6** trivially follows: TT0' ϵ scope(TT0) => TT0' is definite. [5.a)]

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[4] **.a** TT0, TT0'ϵFFOL=> $|S^R|, |S'^R|$ are finite, i.e. for both there is no FSTP-Test termination problem.

.b It were false to conclude, in **D.3**, TT0' = TT0, just because $\prod^{1\le k\le K}TS(s'^k)=\prod^{1\le k\le K}TS(s^k)$, i.e. without verifying that TT0' passes also the whole FSTP-Test, as ∃TT0 ∧ ∃TT0' ∉ scope(TT0) **:** TT0' meets this "product = requirement". E.g., $\{s'^k\}$ need not be independent or well-defined over posc, i.e. not meet FSTP-test3/-test4.

It were false to conclude, in **D.4**, TT0' is ϵ scope(TT0) just because $\prod^{1\le k\le K}TS(s'^k)\le\prod^{1\le k\le K}TS(s^k)$, i.e. without verifying that TT0' passes also the whole FSTP-Test, as ∃TT0 ∧ ∃TT0' ∉ scope(TT0) **:** TT0' meets this "product ≤ requirement". E.g.,, for some TT0 simply define TT0' by removing from S^R an s^{Rv}, as discussed above[3.c/.d)].

.c In **D.5** suffices already: $\exists s'^{Rv}\epsilon\ S'^R \cap S^R \wedge$TT0' not passes the FSTP-Test[3.d)] **=>** TT0' violates scope(TT0).

.d This "TT0 is definite" definition **D.6** is equivalent to *Biosig's,* but needs no unknown CIs (like *Biosig* does). I.e.: A TT0's definiteness test is part of TT0's FSTP-Test, i.e. comes for free. The conclusion is, the Biosig test is equivalent to the FSTP-Test, but just declarative, i.e. not operational, as the FSTP-Test. A (nontrivial) equivalence proof is: By **D.4** holds: TT0'ϵ scope(TT0) ⇔ TT0' passes the FSTP-Test ∧$S'^R \subseteq S^R$.

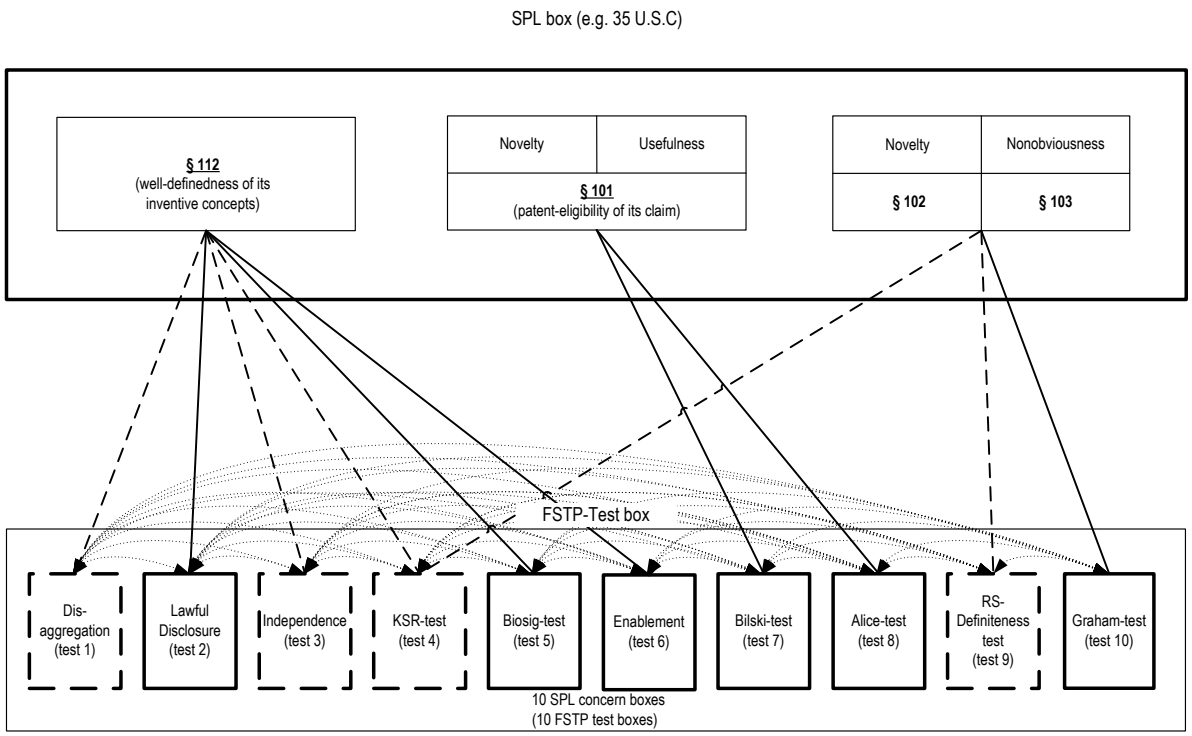

FIG 1

Bold lines show the classical claim construction's test.i's, dashed ones what Mayo/Biosig/Alice additionally require (refined claim construction). "←" show a "use hierarchy" among test.i's. "→" expand it to testi's total dependency.

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The **FSTP^{FFOLLIN}-Test** is a computer implemented method – defining also a system – for testing

- under a given Finite First Order Logic Legal Invention Norm, FFOLLIN, a given Claimed Invention, CI^{FFOLLIN}, which has a given interpretation TT0^{FFOLLIN}, represented by its Generative Set of TT0^{FFOLLIN}, S^{FFOLLIN},
- TT0^{FFOLLIN} – defined by S^{BADFFOLLIN} ::= {BAD-crC0n^{FFOLLIN}/$\forall^{1\le n\le N}$} $\wedge$
  $\wedge$ S^{FFOLLIN} ::= {BED-crC0kn^{FFOLLIN} | 1≤n≤N : BAD-crC0n^{FFOLLIN}=$\wedge^{1\le kn\le Kn}$BED-crC0kn^{FFOLLIN}},

whether this FFOLLIN is satisfied by TT0^{FFOLLIN} alias S^{FFOLLIN},

- whereby FFOLLIN is defined to comprise a conjunction of 10 given **FSTP^{FFOLLIN}-test.o** of TT0^{FFOLLIN} alias S^{FFOLLIN}, i.e. $\wedge^{1\le o\le 10}$FSTP^{FFOLLIN}-test.o – for brevity in the sequel the index **"FFOLLIN"** being omitted, any FSTP-test.o abbr. by just "o)", 1≤o≤10, and for 6≤o≤10 the stereotypic "over model and posc" omitted –

whereby the claimed invention for any TT0 prompts the CI's user to input to it

- the given information ■) $\forall$TT0-elements X0n of TT0, 1≤n≤N, $\wedge$ $\forall$ binary abstract and elementary disclosed creative concepts of all X0n, BAD-crC0n resp. BED-crC0n ■) for |RS|>0 also $\forall$TTi-(dummy-)elements Xin peer to X0n, 1≤i≤I=|RS| $\wedge$1≤n≤N, $\wedge$ $\forall$ binary abstract and elementary disclosed (dummy-)creative concepts, crCin, of all (dummy-)elements Xin, called BAD-crCin resp. BED-crCin, as well as ■) $\forall$ below justifications, by stepwise prompting,

i.e., for testing the S input to it as follows:

11) (a) S^{BAD}::={BAD-crC0n |$\forall^{1\le n\le N}$}, S::={BED-crC0kn|1≤n≤N:BAD-crC0n=$\wedge^{1\le kn\le Kn}$BED-crC0kn};
    (b) justof$^{\forall 1\le n\le N}$: BAD-crC0n is **definite**,
    (c) justof$^{\forall 1\le n\le N\wedge\forall 1\le kn\le Kn}$: BED-crC0kn is **definite** $\wedge$ $\forall$ patent-noneligible BED-crC0kn* are identified;
    (d) justof$^{\forall\epsilon SBAD\cup S}$: BAD-crC0n = $\wedge^{1\le kn\le Kn}$BED-crC0kn;
12) justof$^{\forall\epsilon SBAD\cup S}$: sϵS $\wedge$ BAD-crC0nϵS^{BAD} are **lawfully disclosed**;
13) justof$^{\forall\epsilon SBAD\cup S}$: **Independence-test passed** S is well-defined&independent over model;
14) justof$^{\forall\epsilon SBAD\cup S}$: ***KSR*-test passed** S is well-defined over posc;
15) justof$^{\forall\epsilon SBAD\cup S}$: **TT0's implementation by S is enablingly/lawfully disclosed**;
16) justof$^{\forall\epsilon SBAD\cup S}$: ***Bilski*-test passed** TT0 is non-preemptive;
17) justof$^{\forall\epsilon SBAD\cup S}$: ***Alice*-test passed** TT0 is patent-eligible;
18) justof$^{\forall\epsilon SBAD\cup S}$: ***Biosig*-test passed** TT0 is definite;
19) justof$^{\forall\epsilon SBAD\cup S}$: **RS-Definiteness-test passed** RS is well-defined over TT0;
20) justof$^{\forall\epsilon SBAD\cup S}$: ***Graham*-test passed** TT0 is patentable.

FIG 2:
The FSTP^{FFOLLIN}-Test, the passing of which is necessary and sufficient for a CI's TT0 satisfying SPL

III. PRECISELY DEFINING THE NOTIONS OF "PREEMPTIVITY" & "NATURAL PHENOMENON" & "ABSTRACT IDEA" & "PATENT-ELIGIBILITY"

D.7: Induced by *Mayo* let, for a TT0's CI-element, the term "**improvement-prone**, **ip**" denote a new "property category" for its inC(s), modeled as its(their) "ip-inC(s)". Compared to such an inC, its new ip-inC property is: It is already 'visible' that it will "improve" in its domain and/or its TS, no matter whether predictably in time or not.

Of any CI and/or its inC(s), this definition of an ip-inC enables precisely modeling its/their natural phenomenon or abstract idea "(property) **category**"[6.b)] – so the *Alice* term[5.b)]. In principle, both categories make its CI preemptive – introduced in *Bilski/Mayo/Alice* and modeled below – i.e. they may be seen as categories of such "ip-CIs" exemption from patent-eligibility[5.b)]. This definition of ip-inCs yet enables them to themselves avoiding preemptivity and hence patent-noneligibility of the CIs embodying them (i.e. in their Generative Sets) – as explained below.

ip-CIs' specifications need not disclose enablements for their future potential improvements their ip-inCs model. I.e., for an ip-CI having its FSTP-Test would not perform FSTP-test5 for the improvements of its ip-inCs over their original inCs.

The ip-inCs' capability to precisely identify, right from the outset of applying for a patent for a CI its potential future improvements, evidently shall provide a clean framework for implicitly conveying, with this actual application, a preliminary patent application for the improved respective CI – as outlined below in some detail. The similar but less precisely defined effect has hitherto been achieved by simply mentioning potential future CI improvements in its specification. If this mathematical modelation framework is socially felt as being too narrowing, it may be pragmatically relaxed – then tolerating some preemptivity by SPL precedents using it. (!!)

Two currently broadly discussed ip-inCs – though not so termed:
1.) In the Supreme Court's *Myriad* decision the "BRCA" TT0 has a single CI-element (representing a specific chromosome of the human genome) and its single inC – an aspect of this chromosome modeled by domain(inC)– models, by its TS(inC), "a huge range of 'certain nucleotide sequences'". R&D will visibly but unpredictably in time improve, e.g. TS(inC). Hence, this inC is a natural phenomenon ip-inC.
2.) In *Alice*, its "Closing" CI-element of its "transaction settling" TT0 today has only a single inC ("automatically in the evening"), but its TS will utmost likely but unpredictably improve over time in response e.g. to customer demands (for an additional "close on request instantly", …). Hence, this inC is an abstract idea ip-inC.

D.8: For an $s \epsilon S$ and an s^o let be defined ■) the relation "$s^o > s$" iff domain(s) = domain(s^o) ∧ $TS(s^o) \setminus TS(s) \neq \Phi$, and ■) as meaning of "s=ip" to be that s is an "ip-inC".

D.9 "**PREEMPTIVITY**" by *Bilski*: TT0 is called "**preemptive**" iff ∃TT0'≠TT0 passing the FSTP-Test: scope(TT0')∩scope(TT0)≠Φ ∧ ∃kϵ[1,K]: ($s'^{k}>s^{k}$) ∨ (s^{k}=ip)[5.b].

D.10 "**ABSTRACT IDEA**" by *Bilski*: TT0 is called an "**abstract idea**" iff ∃TT0'≠TT0 passing the FSTP-Test: scope(TT0')∩scope(TT0)≠Φ ∧ ∃kϵ[1,K]∌k':($s'^{k}>s^{k}$) ∧ ($s^{k'}$=ip)[5.d].

This definition of the abstract idea property of a TT0 tells that it is patent-noneligible as preemptive, its preemptivity yet is not caused by a natural phenomenon. Thus, despite of much phony adverse rumor about the Supreme Court's notion "abstract idea" of a TT0: Its meaning is absolutely clear and very reasonable!

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[5] **.a** D.1 introduced a notion reflecting the "scientific standard procedures" in analyzing a problem, it is the SPL-specific analog notion to the well-known notion of "state-diagram", common to all exact sciences.

D.2- D.6 introduced notions mirroring alias modeling the basic scientification impacts of the above quoted Supreme Court decisions on SPL precedents, indispensable for enabling it to consistently dealing with ET CIs. These notions are basic in that they deal with terms having semantics, which – also that of "inventive concepts, inCs" – ought to have been known in the pre-*Mayo/Biosig/Alice* era, already.

The fact that they have not been clarified earlier by SPL precedents tells that it hitherto has not been subject to the scrutiny of scientific analysis – although the Supreme Court by its above quoted decisions repeatedly implicitly asked for it.

D.7- D.14 precisely define further notions indispensable for enabling SPL precedents to consistently deciding on ET CIs in the light of the terms/notions of this Sections' headline. Their semiotics also models scientification impacts of the above quoted Supreme Court decisions on SPL precedents [171].

This paper considers the semiotics alias "SPL precedents new meaning making" for the terms/notions "ip-inCs" and "tw-inCs" introduced by D.7 (enabling clarifying the notion of "preemptivity" and "abstract idea") resp. D.11[5.b] (on this basis enabling clarifying the notion of "patent-eligibility" and better understanding the "substantial more, ≫" relation[5.c]) – and models them all mathematically, except the ≫-relation, of which here only its structural characteristic is tentatively put forward.

Applying this mathematical scrutiny of D.1-D.14 – to the *KSR/Bilski/Mayo/Biosig/Alice* framework – is really awarding, as shown by the many fundamental and unquestionable new insights thus gained into the emerging areas "Innovation-R&D" and "Innovation Mathematics". It is totally unlikely they ever were achieved by just reasoning in natural legal language about therefore poorly defined SPL issues.

.b This equality insinuating sentence makes sense only on the level of notional resolution, where the BED-inCs are seen as meaningful. If this level of abstraction is somewhat reduced – for seeing how their mirror predicates on some appropriately defined spaces would define the BED-ip-inCs and their improvements – one sees that both kinds of preemptivity generating inCs are unequal: In both cases the BED-ip-inCs' mirror predicates are defined on at least 2-dimensional spaces, 1 dimension thereof in both cases representing the respective TS(ip-inC)s components of their natural laws respectively abstract ideas.

But, the mirror predicates of a natural law property modeling and of an abstract idea ip-inC are of quite different semiotics. The former semiotics tells: Nobody is capable of today explaining the internal logic of its TS(ip-inC), i.e. it got to be understood, today, as an axiom, the reasonability of which is supported by nothing else but experience. For the latter semiotics, the internal logic of its TS(ip-inC) is clearly definable by known impacts on its ip-inC of its original TS(inC) component(s), thus enabling the inventor to reasonably justify the choices he/she takes as to this ip-inC determining its CI; this ip-inC models/represents nothing today still unknown or metaphysical[6.a].

.c The same applies for the distinction between the mirror predicates of the ip-inCs and tw-inCs. The examples 1.)/2.) for ip-inCs and 1'.)-3'.) for tw-inCs cannot disclose the whole notional complexity embodied by the relations of these notions to the above quoted Supreme Court notions, i.e. unavoidably embodied by the innovation business with ET CIs – more completely presented by [191,182].

But this complexity should not be misinterpreted as indicating that the approach to mathematically modeling a clean and operational framework for broadly consensual SPL decisions on ET CIs – based on the very abstract and nonoperational Mayo/Biosig/Alice framework serving the same purpose – is just a far cry. Those familiar with science/technology developments know: This approach here presents itself as already operating on intellectually firm ground – on which we got to get ahead quite a distance.

.d As shown in **1.)**, for a TT0 already one of its BED-inCs may be an abstract idea rendering as ip-TT0 (unless compensated by a tw-inC of TT0, as explained below), but also if none of its BED-inCs is an abstract idea, its TT0 nevertheless may be one by D.10. One might assume, TT0's preemptivity is always avoidable by adjusting the TS(BED-inC) of TT0 appropriately. This may work for some TT0s, yet in both cases there are TT0s for which this is impossible (in Alice reducing its TS(ip-inC)s is simply not possible, in the other case reducing TS(inC)s such that scope(TT0')∩scope(TT0)=Φ destroys the "≫", see below).

D.11: Induced by *Alice,* let for an ip-TT0 the term "**transformation-warranting**, **tw**" denote a category of its ip-CI-element/s' properties, modeled by "tw-inC/s" tying its ip-inC/s into a user-application, so transforming this ip-TT0 into patent-eligibility[6.a)].

Three currently broadly discussed tw-inCs – though not so termed:

1'.) In *Alice,* its specification discloses for its "transaction settling" TT0· (see **2.)**) its CI-elements and ip-inCs, but none and no combination of them is "tw-inC impacted".

2'.) *DDR*'s "customer contact" CI-element has a "look&feel" abstract idea ip-inC and the – by *Alice* and accordingly by the CAFC – "customer retention" tw-inC [160].

3'.) CAFC's recent *Myriad* decision strangely ignored, of its TT0 the CI-element "cancer indicator" – in its claims' wordings even explicitly quoted [163,183] – and its tw-inC with TS(tw-inC) containing solely "BRCA1" and/or "BRCA2"[5.c)].

D.12 "**PATENT-ELIGIBLE**" by *Alice*: An ip-TT0 is called "**patent-eligible**" iff $\exists\{k^*\}\subset[1,K]$: $\wedge^{\forall k\in[1,K]}$BED-crC0k$\gg\wedge^{\forall k\in[1,K]\setminus\{k^*\}}$BED-crC0k, whereby the "$\gg$" has the meaning "{k*} transforms the latter conjunction into a user-application"[6.a)].

This definition of patent-eligibility might mislead to considering the CAFC's 2014 *DDR* decision as legally erroneous, by arguing its TT0's "customer retention" inC is in truth an ip-inC[6.a)]. But this were a legal error as, for the posc, the *DDR* specification discloses no such increase of the size of its "customer retention" domain[6.c)].

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6 **.a** The SPL semiotics of the term "X is a user-application" is: "X provides its service directly to a user" (X representing a TT0, its CI-element/s, or its/their inCs), which diametrically opposes the SPL semiotics of the term "X is a downstream-located-application" being: "X provides its service not directly to a user".

As a consequence, for a TT0, the SPL semiotics of the term "{k*} transforms the latter conjunction into a user-application" defines its meaning to be "{k*} has a patent-eligibility generating effect for the user-application by neutralizing the preemptivity generating effect of its latter conjunction's ip-inCs by disabling them from preempting other TT0s[5.b)].

Accordingly – and **this insight is indispensable for understanding *Bilski/Mayo/Alice*** –

- an ip-inC models – as a property of the service its CI-element provides – a service of a downstream-located-application of this property and hence is necessarily preemptive, no matter whether it is of a natural phenomenon or an abstract idea sub-category of the ip-inC category, while
- a tw-inC models – also as a property of the service its CI-element provides – a service of a user-application of this property and hence cannot be preemptive, which enables it to bar this TT0/user-application from preempting other TT0s'/user- or downstream applications'.

.b The principles of both inC main-categories[6.a)], ip and tw – being noneligibility representing resp. excluding by "overriding" it[5.b)6.a)] **(!!)** – are induced by above Supreme Court's decisions as to the semiotics of refining SPL precedents for catering all parties interested in ET CIs, as *Mayo* requires. FSTP-Technology – originally designed for scientizing only the "obviousness" notion, as the BGH "*Gegenstandsträger*" decision indicated, preceding *KSR,* both reaching far into metaphysics [6[4)],7[4)]] – supports both inC categories [161]. While their semiotics are currently vividly discussed in smart but conventional legalese [195] – e.g. distinguishing between technical and non-technical TT0s – the ip/tw-inCs models avoid this distinction (as indefinable) and strive for more uniformity, as seemingly also being an *Alice* objective.

.c By its elements' "combinations", *Alice* allows ip- and/or tw-inCs to be BOD- or BAD- or BED-inCs.

.d In response to emerging customer requirements, TT0 improvements may lead to increasing the size of the domain of this inC and its TS – the latter from currently having the above single domain-element "customer retention" only (which by the *DDR* specification is defined as "not forwarding the customer to the Internet server of a supplier of a product if the customer clicks on this product") – such as enabling TS(inC) to comprise also values like "keep customer id secret", "keep all supplier ids secret", ….. But alike is possible with any ET CI – hence the resulting ET CIs then are considered to be separate [137]. **(!)**

.e see [7,64] – also emphasizing that it is unclear whether a pathological CI[FFOLLIN] exists, at all.

.f see [175]

Finally, for the relation "≫" just used – introduced by *Alice*, initial clarifications gained by this paper and [150, 151,153,175,171] – a comment is in place: For achieving consistency in SPL precedents, a threshold common to all CIs is indispensable (at least ET sub-category wise[6.b)]), and the least restrictive one – i.e. the one with maximal scope(ip/tw-CI) – is assumed to reflect the intention of the Supreme Court's above quoted line of decisions[6.a)3.c)].

This assumption is supported by the expectation, that courts would consider later simple limitations of the TS of this ip-inC as not disclosing a nonobvious CI – without explicitly explaining the difficulties to intellectually overcome for rationally arriving at them and the advantages embodied by them, especially as this broadening and/or shrinking of the scope(CI) has been anticipated by the scope(ip/tw-CI)[6.a)]. I.e.: The latter "pseudo-anticipation" would surely act as an "innovation catalyzer" – though this thinking requires refinement and feedback from the public.

D.13: For an ip/tw-CI, let "**scope(ip/tw-CI)**" be the modification of the S^R of the original CI as it results from the modifications of the domains and TSes of this original CI's inCs, first by its ip-inCs, making this ip-CI preemptive, and then by its tw-inCs, making this **ip/tw-CI** a nonpreemptive user-application.

D.14: Let the meaning of the relation "**substantially more than**, ≫" between an ip/tw-CI and its ip-CI be: "The ip/tw-CI's tw-inC(s) eliminate the preemptivity created by its ip-inC(s) by modifying their domains and/or TSes such that any ip-inC is defined only for and this ip-CI is transformed into a user-application ip/tw-CI of its tw/ip-inC(s)".

THEOREM: Any non-pathologic[6.d)] ET-CI may be upgraded – by using the FSTP-Test – to unassailable patent-eligibility & patentability & nonobviousness[6.e)].

Depending on the creativity effort invested in what parts and to what extent, the scope(ET-CI) would thereby vastly controllably shrink resp. grow [136].

The preceding definitions, consequences, and the theorem provide hitherto un-available scientific insights into the being of an invention i.e. intellectual creation[5.a)] – since the 70s known to be precisely describable by (inventive) concepts, as now required to be used by *Mayo/Alice* – which is legally protectable by some FFOL Legal Innovation Norm (e.g. patent/copyright/trademark laws, institution/company regulations, …..). Thus, they are fundamental also for any kind of IPR in innovations, which the law makers in any constitutional democracy eventually determine – and its Highest Court(s) got to interpret, as the Supreme Court did extremely successfully, from the US society's point of view.

In total: There is no "End of the pro-patent era", as insinuated by some [196]. The contrary is true: This era just got absolutely future-proof – world-wide.

IV.

A REMAINING BIG QUESTION – BROADLY IGNORED, HENCE BRIEFLY REMINDED

This inconvenient question is neither technical, nor legal, nor political – it is purely sociological and will hit soon and hard.

Already footnote 4 of [6,7] postulated that and why FSTP-Technology – the herald of Innovation Science [182] – is a new exact technology/science located on top of elementary Mathematics and below Physics, which enables a groundbreaking type of Innovation Expert Systems, IESes [161]. Just as the motorization of physical vehicles, in the first half of the 20th century, rapidly enabled a broad mechanization of all kinds of transport activities, the computerization of intellectual vehicles will rapidly enable a broad scientification of all kinds of intellectual property rights/transportation activities. In particular, IESes will massively impact on the professional activities of in particular patent experts of any kind – though much more dramatically than motorization/mechanization has ever achieved in the world of physical transport.

The above inconvenient question then is, how this high flying prognosis for IESes – their inevitable impacts on PTOs is outlined in [163] – fits into today's professional reality, as it presents itself at such overall extremely important events like the USPTO's "Patent Quality Summit" in DC on 25.-26.03.2015.

Of this question's many facets, touched at this event, here only the most important yet vastly ignored one is addressed. It reflects that the range of patent quality issues, the USPTO must care for, is so broad that its activities have difficulties of finding a common denominator. And the same applies to the development activities of the professional profiles of its customer communities, represented by the attendees.

This most advanced kind of "digital divide" plaguing both camps, the USPTO and its customer communities, became apparent already during its first hours. The "quality related aspects of Substantive Patent Law and its currently very fast and very fundamental developments" minded participants felt evidently somewhat lost among the vast majority of participants focused on "quality aspects of the current patent eco system as it is", i.e. abstracting from such SPL developments.

The excellent main panel of this event clearly recognized this broad spread in understanding the current situation[7]. In particular [192] addressed both these main streams with a strong bias towards the latter one – as seemingly expected by the audience and implicitly confirming its dominating "practitioner belief" that an abrupt demand of substantial increase in professional qualification is just not thinkable.

This sharply contrasts to the question written in huge letters on the wall and that the same persons [192] vividly emphasized elsewhere: How to disseminate, from mainstream one, the many advantages coming along with so seen ET CIs – by mainstream one (to be) derived from the Supreme Court's above line of decisions, i.e. this substantial increase in professional qualification enabling to professionally leverage on them – to the in total hundred thousands of individuals of mainstream two[7]?

The majority's reluctance to notice this dissemination problem of increased IPR know-how is the reluctance to notice that the society's wealth is increasingly depending on the economical successes of ET CIs resp. of their industries, i.e. that hence the "patent eco system" must undergo a transition from its today's pre-industrial manufacture orientation to a scientized knowledge industry – as it similarly occurred previously in agriculture, clothing, food, construction, automobile, … eco systems, always generating losers and winners, indispensable for preserving the society's wealth.

The decisive distinction to such earlier transitions: ET CIs' R&D requires much higher long-term & high-risk investments than ever seen before. Due to its antiquated manufacture imprint, today's patent eco system would fail to convince investors of ET CIs' capability to guarantee a sound business model requiring such investments. By *Mayo*, the Supreme Court recognized this threat and put SPL precedents on ET CIs on the right track – namely on that of its scientification, as shown above – thus relieving it from this "pre-industrial stigma" and enabling it to gaining back investors' trust.

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7 An example of this problem is the non-discussion between both main streams about the disastrous consequences that the *Mayo/Alice* decisions originally had for many PTO examiners' views about patent applications, in particular about those for ET CIs. And still today, their representative in this panel indicated in no way that the corps of examiners accept that the Supreme Court by these decisions – evidently stimulated by the economically rapidly increasing importance of ET CIs and the classical SPL precedents had proven not to be consistently applicable to them – had to pose these new intellectual challenges as to accordingly adjusting such ET CIs' Intellectual Property Rights, i.e. for optimally unfolding ET CIs' economically very beneficial potentials.

A convincing representative of a quality initiative – as to this substantially increased professional qualification – that the USPTO's first main stream is capable of establishing is its compilation and repeated refinement of the "Interim Eligibility Guidance" (IEG) and its consensus making within this main stream in its customer camp as to this all overarching SPL precedents refinement for catering ET CIs.

Yet, listening to the contributions during only the first hours of this event was sufficient to clearly recognize that there is only little common ground with the second main stream in both camps (USPTO and customer communities) as to appreciating the advantages of this significantly higher level of SPL precedents required/stimulated by the Supreme Court and now implemented by the first main stream in both camps.

This is really problematic, as the second main stream attendees at this event are the best informed representatives of this huge crowds in both camps. Their members hence must be estimated to be even more reluctant to accept that there is a challenge in their business life, which they got to master – and indeed can, as the IEG initiative shows. Though, at the expense of some unavoidable intellectual training, requiring some true efforts.

Thus, while the reception of this IEG is just the initial step to this higher level of professional qualification required in dealing with ET CIs – as shown by the CAFC's preceding experience of needed notional preciseness and the respective vogue of definitions and insights – it yet is also the most cumbersome one just as fortunately the most promising and eventually awarding one, as shown by the IES.

The FSTP-Project's Reference List

FSTP = Facts Screening/Transforming/Presenting
(Version_of_10.04.2015, i.e. of this paper")

[1] S. Schindler: "US Highest Courts' Patent Precedents in Mayo/Myriad/ CLS/Ultramercial/LBC: 'Inventive Concepts' Accepted – 'Abstract Ideas' Next? Patenting Emerging Tech. Inventions Now without Intricacies"•).
[2] AIT, "Advanced Information Tech.", denotes cutting edge IT areas, e.g. Techniques of Artificial Intelligence/ Knowledge Representation/Description Logic/Natural Language& Semantics &Semiotics/System Design/….
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