

The *Mayo/Alice* SPL Terms&Notions in FSTP-Technology & PTO Initiatives

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The Supreme Court's *Mayo/Alice* SPL terms & notions^{1.a)} – by FSTP-Technology embodied – are one of the triggers of refining the US NPS by USPTO initiatives.

I. CLARIFICATIONS OF THE MEANINGS OF THESE *Mayo/Alice* TERMS^{1.b)}

This section provides [169,175-181] certainty about ■) groundbreaking notions as to testing ET CIs^{1.a)} for their satisfying SPL and ■) the usefulness of the FSTP-Test. The Supreme Court introduced these key notions by its unanimous line of *KSR/Bilski/Mayo/Myriad/Biosig/Alice* decisions.

For many “patent practitioners” these new notions^{2.a)} are still obscure as allegedly embodying legal uncertainty. But, this allegation is no longer tenable: These initially indeed somewhat Delphic new key notions were incrementally clarified [5-11] – even scientifically^{1.c)}, thus warranting their meanings hold for ever. These clarifications are here restated by answering 12 crucial questions about these notions, most of them raised by recent events: ■) 6 fundamental questions as to the CAFC/PTO/public context of the IEG^{1.a)}, and ■) 6 questions as to these new notions' amazing practical advantages, the Supreme Court by them enabled^{2.c)}. In total, now these new key notions may be used easily and safely – the latter as mathematically confirmed [91].

These 12 clarifications as to the Supreme Court's *Mayo/Alice* framework – it refines the interpretation of the SPL and of ET CIs such that it caters to the needs of ET CIs for patent law protection^{2.c)} – in particular show that it takes SPL precedents to a higher than today's level of development^{1.d)}. This higher semiotics of SPL precedents is necessary and sufficient for drafting, for any ET CI, an **ARBITRARILY ROBUST PATENT**^{2.d)} – hitherto totally impossible in any NPS^{1.a)}!

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- ¹ a. SPL = Substantive Patent Law; ET/CT = Emerging/Classical Technology; NPS = National Patent System; CI = Claimed Invention; IEG = Interim Eligibility Guidance; [160] presents the author's more detailed comments on the current IEG version.
 b. A "term" is an "identifier/name". A pair <"term", its "meaning"> is called the term's notion.
 c. "SPL semiotics" of an SPL term/meaning/notion is defined as its "new&useful-meaning-making over of other terms/meanings/notions" – again being a notion, yet now with this specific "meaning generation" meaning, the "new&useful" identifying meaning-making for SPL. Semiotics (research) is, in its meaning-making, not subject to any specific such limitation, yet any kind of legal semiotics would be limited to its kind of law. E.g.: "SPL semiotics" denotes SPL meaning-making, here for the Supreme Court's new SPL terms/notions in *Mayo/Alice*.
 d. namely to use AIT [2] in ET CIs' SPL precedents and thus to develop FSTP Technology.
- ² a. "patent-eligibility" is solely one of the key notions/semiotic to be clarified precisely for enabling ET CIs' robust protection by SPL – other ones are e.g. an ET CIs' "claim interpretation and construction", "inventive concept", "definitiveness", any one potentially comprising further such SPL semiotics, e.g. "preemption", "abstract idea", "building block of human ingenuity".
 b. All experts agree: It ■) is an enormous improvement/clarification as compared to its predecessors, but ■) needs further such clarifications of the *Mayo/Alice* framework, by refining it^{2.c)}.
 c. The semiotics made by *Mayo/Alice* for SPL – for meeting ET CIs' needs – induces on their properties semiotics, such that is assessable: A CI satisfies SPL's, iff CI has all the new properties these new semiotics imply. – requiring their clarification, as FIGs 1&2 show.
 d. This fundamental semiotic insight – that for any CI absolutely unassailable patents can be designed/drafted – is internally referred to by the catchword "quantification of CIs" [150,151].

Evidently, this fundamental FSTP insight^{2.d)} is legally, technically, and economically of highest importance – due to the following.

In *Mayo* the Supreme Court explicitly explained its responsibility, by the Constitution, for warranting that SPL precedents caters to the unfolding of the economic potentials of the ET CIs^{3.a)}. Its whole above quoted line of decisions indicates that it considers the respective CAFC decisions detrimental for this unfolding, as they failed to refine SPL precedents^{3.b)} as indispensable for fostering developing ET CIs – due to their ET caused particularities^{4.a)}.

Painting with a broad brush: This responsibility of the Supreme Court and its *Mayo/Alice* framework^{5.a)} – the latter implying the above key insight into a consequence of this refinement of SPL interpretation – enable understanding the binding paradigms^{5.b)} of the US NPS indispensable for rationally (i.e. “above any doubt”) deciding, **A)** what are the **a)** precise and **b)** complete and **y)** for all ET CIs unique requirements stated by 35 USC SPL (i.e. being “consistent over all ET CIs”) ^{4.c)} to be met by any ET CI for passing its “SPL test”, and **B)** what is, for a given ET CI, its set of inventive concepts, which describe of this ET CI (as for the posc disclosed by ET CI’s patent) all its properties **a)** precisely and **b)** completely (i.e. these ET CI properties “as a whole”), such that **C)** it is decidable, whether this ET CI of **B)** meets all the SPL requirements of **A)** (or not).

³ **a)** i.e., it is false that the Constitution does not support these Supreme Court requirements.
b) – without using these terms/notions, but implying them by its wording (“... meeting the needs of ET inventions”): As all ET CIs are (at least partly) model based⁴⁾ only, this wording indispensably requires this refinement/scientification in describing and analyzing them.

For not misinterpreting this requirement as meaning “lawyers/examiners/... must become scientists”, one may also talk just of “increased scrutiny” needed for dealing with ET CIs.

⁴ **a)** in particular their factual intangibility/invisibility/fictiousness and rapid changes, thus being (partially) based on purely intellectual but vastly not understood models [150,160]. In spite of their vast vagueness, such models nevertheless represent the “glue” between an ET CI’s description and the “pertinent ordinary skill (creativity), pos(c)” a model comprises [175].

In more detail: Any model is used in this ET CI’s interpretation – if relevant for it, i.e. used by it – via one of the kinds of “paradigms”^{4.b)} alias “interpretation basis” which any model comprises [175]. As in FSTP technology an ET CI is subject to an incomplete “plcs” and a complete “pmgp” interpretation^{5.b)}, also an incomplete and a complete paradigm alias interpretation basis exists. Hitherto is often not recognized the indispensability, for correct/complete thinking about an ET CI, of at least one such model the paradigm it provides.

b) supposed to be functionally unique for any one whole NPS

c) “uniquely” here means that this requirement states: for any ET CI must hold that testing it twice under SPL would deliver the same result – more precisely, this must hold for any one of its interpretations [58], which is not elaborated on in more detail in this little paper.

⁵ **a)** *KSR* launched the key notion “inventive concept” by requiring creativity to be considered.
b) a paradigm here is defined to be a set of precise specifications of, as to SPL, the meaning of any of its clauses, and as to a CI, the property of any of its inventive concepts [150,151]. The meaning of a CI (and all its patent’s terms) thus is depending on the paradigm “underlying” it, i.e. used for specifying/“modeling” it. The SPL meaning just as any CI’s meaning evidently is composed of its basic “plcs-only”^{5.c)} and its – as to **b)** above – complete “plcs+pmgp”^{5.c)} meaning.

The notion paradigm is known since long in many non-technical contexts, while its analogon “interpretation basis” is today vastly used in (automatic) Language Translation and alike.

c) plcs = patent law carrying semantics, pmgp = patent monopoly granting pragmatics.

d) whatever paradigm is unavoidably and not knowingly used is flawed as to **a) V b) V y)**.

For “patent practitioners” the details of this rationale **A)-C)** are hardly interesting and hence are put into ftn^{6.a)}. Yet, without understanding the base lines of this rationale, for them the Supreme Court’s excellent intuition as to the needs of ET CIs (proven by its above quoted line of decisions) inevitably must remain a mystery, i.e. how to proceed in further developing SPL such that it is capable of efficiently catering to the needs of creativity/innovativity in ETs.

For the R&D communities, in particular those dealing with ETs – as well as for the investors into them and for the politicians controlling both – the need of predictable and robust patents is total consensus, as outlined by the *Mayo* opinion.

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- 6 a Put more precisely – for mathematical precision see [91] – this reads: The Supreme Court’s SPL interpretation by these decisions requires the meaning^{6.a)} of the SPL – not only linguistically, but also semiotically [171,175], i.e. also in terms of “meaning-making” – as to
- the SPL itself, to be determined by using an interpretation basis, i.e. a paradigm, which is basic (as only plcs considering) or complete (as additionally also pmgp considering), the “plcs-only” one being called “**SPL paradigm^{plcs}, SPLPAR^{plcs}**”, and the “plcs+pmgp” one **SPLPAR ::= SPLPAR^{plcs} U SPLPAR^{pmgp}**, whereby both SPL paradigms – for modeling part of resp. all the meaning of the law “35 USC SPL” – ought to be independent of any CI to be tested for satisfying SPL, though today
 - **SPLPAR^{plcs}** is for ET CIs a superset of that for CT CIs^{6.c)} (see FIG 1), while
 - **SPLPAR^{pmgp}** for CT CIs is practically negligible, while \forall ET CIs comprises the patent-eligibility exemptions of the above Supreme Court decisions^{6.c)}.
 - any CI, to be determined by using an interpretation basis, i.e. a paradigm, being split exactly the same way, i.e. is basic (only plcs considering) or complete (as additionally also pmgp considering), the “plcs-only” one called “**CI^{PAR^{plcs}}**”, and the “plcs+pmgp” one “**CI^{PAR} ::= CI^{PAR^{plcs}}**+pmgp = **CI^{PAR^{plcs}}** U **CI^{PAR^{pmgp}}**”, whereby of both CI paradigms – for modeling part of resp. all the CI meaning –
 - **CI^{PAR^{plcs}}** = **SPLPAR^{plcs}** (the correct one, see FIG 1^{6.b)}). As this part of the total **CI^{PAR}** is absolutely independent of any CI, the FSTP Test structure (see FIG 2) is invariant over all CIs and checks for any one of them, whether the latter CI’s set of inventive concepts^{6.e)} in principle (subject to its pragmatics) satisfies SPL, while
 - **CI^{PAR^{pmgp}}** models the pmgp requirements of SPL to be met by this CI on top of the refined **CI^{PAR^{plcs}}**, i.e. itself is a refined **CI^{PAR^{pmgp}}**, which is to some extent CI specific, but partly also CI independent.

I.e.: These CI pragmatics tests are CI invariant embeddings into the FSTP Test’s stereotypic plcs structure – and are principally also CI independent, yet with the exception of CI specific input (provided by the FSTP Test user) to the CI’s pragmatics tests, as modeling its pragmatics’ details by details concerning the CI’s inventive concepts.
- A precise \wedge complete \wedge for all ET CIs unique interpretation of one of these decisions or CIs is logically impossible without determining, \forall CIs and SPL, the resp. **PAR^{plcs}** and **PAR^{pmgp}**, i.e. their **a) \wedge b) \wedge y)** properties^{6.c)} – as by such a deficiency of a paradigm one of its 3 attributes may evaluate to F or be indefinite^{6.a-b)}.
- .b – as to SPL’s completeness needs (**b)** above), to be met by the refined SPL paradigm^{6.b)}.
 - .c **SPLPAR^{plcs}** holds for CT CIs, too, but there of it only a subset is considered today (see FIG 1) – one of the serious sloppinesses in classical claim construction, applied to ET CIs often leading to semiotically untenable court decisions, as vastly under-interpreting the CI at issue [171,175].
 - .d Principally, **SPLPAR^{pmgp}** comprises also for CT CIs these patent-eligibility exemptions, but there they practically never become effective, thus skipping them hitherto was not a problem.
 - .e – this is a bedrock principle of rationality, as felt/postulated/known already by Aristoteles/Kant/Frege/Gödel/Turing/Tarski/Chomsky/Church/..., underlying what is called (since the early 20th century) “Analytic Philosophy” and is needed for axiomizing Mathematics and mathematic branches of AI, e.g. the Mathematical Knowledge Representation here used. AIT [2] is a much broader range of sciences, comprising e.g. System Design Technology (for the IES [161]).
 - .f – assuming, for simplicity but without restricting generality, for this latter CI there is one interpretation only, i.e. only a single Generative Set of inventive concepts [58].

Below the issues 1.)-6.) are explained first, raised by patent experts of the PTO’s “IEG Forum” or the PTO/GWU “WIPIP conference” 2 weeks later. Adding their information to the IEG – that the Supreme Court required by these new notions a refinement of the hitherto SPL paradigm^{7.d)}, for thus making it meet the needs of ET CIs – would accelerate leading the examiners and the public to appreciating and applying (in ET CI’s SPL tests⁸⁾) these new notions correctly.

Thereafter, 6 author-added issues briefly clarify ■) in 7.)-11.) that/why the semi-automatic FSTP-Test (of an ET CI for its satisfying SPL or its patent-eligibility criterion) supports all these new notions^{7.a)8)}, and ■) in 12.) that/why it takes the patent-business from its today still “manufacturer” level of development to the much higher “(post-)industrial” such level^{7.d)}, all Internet potentials multiply integrating – what is impossible to achieve without these new notions’ semiotics.

- 1.) **Are these Supreme Court’s new *Mayo/Alice* terms and notions by now of stable legal clarity?**
- 2.) **Where, in a patent, is the meaning defined of an “ET CI’s inventive concept”, and what is the notionally decisive distinction between “claim interpretation” and “claim construction”?**
- 3.) **May an ET CI’s inventive concept be a natural phenomenon and also an abstract idea?**
- 4.) **Do these new notions require a refined claim construction – for an ET CI’s SPL test?**
- 5.) **Are these new notions conflict-free as to the case law?**
- 6.) **Do these new notions enforce conflict-freeness among court decisions and/or the IEG?**
- 7.) **Does the FSTP-Test clarify all these new notions’ meanings and their correct use?**
- 8.) “ “ “ “ **enforce the correct use of these new notions?**
- 9.) “ “ “ “ **quantify any ET CI by these new notions as implied by *Mayo/Alice*?**
- 10.) “ “ “ “ **represent the result of science? Or only of some changeable voting?**
- 11.) “ “ “ “ **clarify the line between questions of fact and questions of law?**
- 12.) “ “ “ “ **really warrant an amazing increase of ET CIs’ efficiency and robustness?**

Finally, Section III must reiterate on several of these key issues, as the author learned from the questions/discussions that arose at the recent PTO/IPO-EF day on 10.03.2015. They namely unmistakably showed that there is a problem never encountered before (at least in peace times): The need of rapidly achieving a dependable consensus between the hundred thousands of decision makers in the innovation business as a whole [188] for eliminating the risks in SPL protection for ET CIs caused by their being just model based^{7.c)}, if dealt with as CT CIs^{1.a)}. But enabling this broad consensus – decisive for necessarily very high investments in unavoidably long-term/high-risk ET R&D – depends on further incentives, especially on “substantial efficiency increases [187]”, i.e. economically making ET R&D business very well worthwhile. Clarifying the above 12 issues and those in Sect. III, next, proves: The precondition of this transition^{7.d)} is evidently fulfilled.

7 .a) Referring to FSTP papers is unavoidable for compactness of this one.
 .b) – sooner or later occurring anyway, as scientifically well defined and by AIT supported [2]. –
 .c) – for these models exists no common intuition, as for tangible/visible CIs^{4.a)}
 .d) By history, this transition of such a development takes place iff its scientification succeeds.

8 The FSTP-Test is shown by FIG 2. It indicates – by the names of its 10 subtests – that it is induced by and correctly models and comprises this whole line of Supreme Court decisions as well as, for a given ET CI, all its SPL satisfiability tests, provided all input to it is confirmed by the posc (hence assumed to be correct [150,151]).

1.) **Are these Supreme Court's new *Mayo/Alice* terms and notions by now of stable legal clarity?**

In a principal sense, and as seen by the 3 authorities here at issue:

- **YES** for the Supreme Court – by its *Alice* decision.
- **YES** for the CAFC¹¹⁾ – though panel dependent. Panels' Supreme Court conforming *DDR/CET* decisions are countered by other panels' e.g. *Myriad/Cuozzo* decisions, by lip service also conforming but not by reasoning, as both cases vastly leverage on the BRI^{pto} and hence clearly contradict *Biosig*^{9.a)/b)} (and rationality).
- **YES** for the IEG¹¹⁾ – as most of its elaborations meet the *Mayo/Biosig/Alice* requirements, except that it strangely still requires to use the BRI^{pto}^{10.a).b)}.

In a rigorous/scientific⁸⁾ sense: **YES** – as is shown by FSTP technology.

2.) **Where, in a patent, is the meaning defined of an “ET CI's inventive concept”, and what is the notionally decisive distinction between “claim interpretation” and “claim construction”?^{9.d)}**

Usually, not solely in the wording of the ET CI's claim – ET CI's inventive concept even needs not be mentioned by this wording, as shown by *DDR* [150]: It solely must be disclosed by the specification of the patent (application) comprising this ET CI. The process of determining, what of the claim of a C(laimed) I(nvention) thus is indeed disclosed is called this claim's “**interpretation**”. This “**claim interpretation**” thereby additionally determines this CI's “**meaning**”, which since *Mayo/Alice* is called CI's (total) “**inventive concept**”^{9.d)} (modeling CI's total “**inventivity**”). I.e., for a thus disclosed ET CI, its claim interpretation determines ET CI's meaning (= total inventive concept, modeling ET CI's total inventivity).

At that point in time it is not yet clear, whether the thus determined meaning of this ET CI satisfies SPL, abbreviated by: whether “ET CI satisfies SPL”. The process of determining, whether an ET CI satisfies SPL, is called “**construing for this ET CI its claim construction**” – more precisely: “**construing for the thus determined meaning of the ET CI its claim construction**” [177,178] – for brevity just “**ET CI's claim construction**”

Hence, before starting construing this ET CI's claim construction, the ET CI's meaning (= compound inventive concept) must be determined by performing ET CI's claim interpretation. Then the process of construing its claim construction solely checks whether this ET CI satisfies SPL – but does not change this ET CI.

⁹ .a) Only the use of the BRI^{mayo/biosig/alice} is legally correct, by *Biosig*, in any legal context^{10.b)}.

.b) By contrast to ftn^{10.a)}, the PTO may use its BRI^{pto} at gusto in its PTO internal examination procedures. Thereby it is irrelevant that most of its examiners hitherto have been misled – namely, to believe in the legal correctness of applying the BRI^{pto}, what contradicts not only the CAFC's 2005 *Phillips* decision but even the Supreme Court's 2014 *Biosig* decision, which unmistakably qualifies the BRI^{pto}'s use in a court decision as legal error. Nevertheless, this clarification by the Supreme Court is totally ignored by the CAFC in [181] and in other cases, although the meaning of the term “BRI^{pto}” is undecidable, i.e. is scientifically known to be plain irrationality. Hence, it has anyway no chance to eventually prevail and to perpetuate this evergreen quarrel over it [21,68] into eternity.

In so far^{10.c)}, the IEG – clearly requiring the use of its BRI^{pto}, i.e. incompletely informing (for not to say des-informing) its readers by encouraging them to often vastly under-interpret their ET CIs [179], i.e. to trivializing them – ought to be urgently clarified accordingly, also for PTO's examiners (see 4.))!

.c) In *Cuozzo* [181] a BTAP panel and the resp. CAFC panel simply ignore the Supreme Court's *Biosig* decision and replace the *Cuozzo* inventor's invention by their own trivial one. While the latter indeed is obvious by *posc*, for the true invention both bodies fail to show this.

.d) For notional consistency in *Mayo/Alice*, the meaning of the term “inventive concept” of a CI (or of an ET CI) represents the total inventivity of this (ET) CI or a quantum/increment thereof [18,19].

Probably the simplest way of determining the meaning of an ET CI in its claim interpretation is to use its inventive concept's elementary increments (= "quanta"), as these are also required for construing its claim construction. Thereby both processes, ET CI's claim interpretation and its claim construction – notionally being quite different, yet both heavily affected by the above explained Supreme Court's paradigm refinement – may be executed vastly overlapping.

Nevertheless, this total process is much more complicated than felt or insinuated by SPL literature [177,178], due to two reasons: ■) normally one can start it only iteratively for determining ET CI's meaning by its elementary quanta of inventivity, i.e. cannot determine its total inventive concept without backtracking. ■) it must identify and check all feasible combinations of such inventivity quanta for their meeting all SPL requirements, otherwise ET CI's analysis were incomplete (as principally shown by FIG 1, and in all detail by the FSTP-Test in FIG 2).

3.) May an ET CI's inventive concept be a natural phenomenon and also an abstract idea?

YES – many (or all?) "natural phenomenon" inCs are also abstract ideas.

E.g., the inC "acetylsalicylic acid", product name "Aspirin", evidently may reduce headache and hence models/represents/is a natural phenomenon – but it is known to provide relief also as to several other diseases, in particular when being hit by various strokes. This makes it, as such, being also an abstract idea.

The same duality exists with most invented chemical or physical compounds achieving – potentially dramatically different – natural phenomena when used as ingredient/part in other products. E.g., a gyroscopic compass, the gyroscope of which causes the natural phenomenon that rotating it is hard. But it also may .) be built into an appropriate device on earth which then indicates the four cardinal directions .) or whether a sign is vertically or horizontally presented, or .) control a body's balancing mechanism for preventing its rolling, or .) ... – thus rendering the gyroscope, as such, to be an abstract idea, too. I.e.: Many (if not all) inCs representing/modeling natural phenomena are also abstract ideas.

By contrast, many "abstract idea" inCs are no natural phenomena, e.g. inCs modeling mathematical methods for accelerating some computations.

4.) Do these new notions require a refined claim construction – for an ET CI's SPL test?

YES – Otherwise an acceptable level of scrutiny is hard to warrant for ET CIs' SPL tests, due to their much higher than hitherto understood complexity of such testing, as the *Mayo* framework makes aware (see the FSTP-Test, FIG 2).

I.e.: These new notions – in particular "inventive concept" and "abstract idea" 12.a) – revitalized the quite fundamental discussion in full breadth about how to describe precisely^completely^uniformly, for an ET CI, all its functional and non-functional properties, including its scope (see the respective discussion above and the fragmental presentations of this problem in [177-180]).

This refined claim construction is a focal part of what the Supreme Court calls its "**Mayo framework**" for an ET CI's SPL test – though elaborated on.

5.) Are these new notions conflict-free as to the case law?

YES – The legal semiotics of a precedential decision, i.e. its useful-meaning-making, depends anytime on its underlying paradigm, providing the legal and factual determinants of this meaning-making, which include its pragmatics. This legal semiotics – based on this precedential decision’s useful-legal-and-factual-meaning-making pragmatics, in particular – is void where-/whenever this specific pragmatic determinants don’t exist, as common sense commands. Hence, a precedential decision about an ET CI may have, by definition of “ET”^{4.a)}, a short “semiotics lifetime”^{10.a)}, whereas usual precedents don’t have semiotics lifetimes, anyway no thus short ones^{10.b)}.

This pragmatics of precedential decision is today being practiced, anyway, while here only the semiotics explanation is rationalized/provided.

6.) Do these new notions enforce conflict-freeness among court decisions and/or the IEG?

NO – at the time being, inconsistencies evidently are all around, still.

YES – as in few years’ time the scientification of SPL precedents as to ET CIs will enforce conflict-freeness^{12.b)}. History shows: Once the scientification of a knowledge area becomes evident to the respective in-group – what currently occurs in SPL precedents – most initial such conflicts in this area cease to exist.

As explained in 2.), presently such conflicts about an ET CI are caused by the initial uncertainties of most courts and the PTO as to ■) the semiotics of the Supreme Court’s *Mayo/Alice* decisions, which must be understood when construing its claim construction, amplified by their ever lingering lack of understanding ■) what clarifications an ET CI’s claim interpretation must achieve.

¹⁰ .a) At *Mayo* time, CAFC and PTO didn’t know the meanings of the terms “inventive concept”, “abstract idea”, “natural phenomenon”, “preemption”, “enough”/“more than”, ... to be identified in ET CI patents, although therein not quoted. Thus, the Supreme Court outlined their meanings (i.e. of these notions) by its *Alice* decision in more detail, and both institutions showed, e.g. by *DDR* and IEG, that they now clearly understand them in principle. These now declaratively – i.e.: not yet procedurally – understood new notions therefore must be used in ET CIs’ SPL tests, as there is no other way to base these tests on these new notions’ semiotics. I.e., prior to *Mayo*, no other terms/notions existed for showing the way required by the Supreme Court that, in an ET CI’s SPL test, the ET CI satisfies SPL in the Supreme Court’s *Mayo/Alice* interpretation. Thus, only this SPL interpretation/paradigm refinement (see above) performed these new notions’ exact meanings-making and hence are part of its semiotics.

Here the IEG is vastly^{10.b)} on the correct track – although these new terms/notions/pragmatics/semiotics ought to be further going clarified, namely also procedurally. I.e.: For these new terms’ everyday use their meanings/pragmatics/semiotics procedural, hence refined, understanding is indispensable, as shown by the FSTP-Test [175]. Scientifically this semiotic refinement into BOD/BAD/BED/BID level of notional resolution is indispensable, anyway.

Note: This much talking about semiotics is easily avoidable – i.e. the notion of semiotics need not be conveyed by the IEG to its readers – by simply demonstrating therein the practical advantages of the refinement of these new notions. The rest, indeed, is scientific nice-to-know, but dispensable.

Also the semiotics of other terms, e.g. “directed to”, should be explicitly clarified by examples. The present IEG comprises several such semantics/semiotics stumbling blocks.

.b) While the law-maker, subject to politics, is vastly free to set legal norms – assuming the Supreme Court complements them by precedential decisions – other courts are not entitled to set further legal norms by applying some precedential decision without assessing that its semiotics is factually applicable (see 5.), 6.), and 9.)). I.e.: For any ET CI, this court must asses that for • its ET the • resp. semiotics lifetime has not expired – otherwise inconsistent ET CIs’ SPL precedents arise¹²⁾.

The above line of Supreme Court decisions does not create such ET and/or CI priority time specific precedents, but its precedents sets uniform norms for all ET CIs’ claim constructions.

Such present conflicts are indeed caused either the simple way – by the CAFC’s occasional use of the BRI^{pto}, e.g. in its recent *Myriad* decision¹¹⁾ (though some panels don’t commit this legal error, e.g. in *DDR*) – and/or by misinterpreting the semiotics *Mayo/Alice* defined and require to be used in construing an ET CI’s claim construction, e.g. again by the CAFC’s recent *Myriad* decision¹¹⁾.

The scientification of this whole area of ET CIs’ SPL precedents will quickly and completely oust all such potential sources of legal errors – as keeping much caring for them will soon be taken as an awkward lack of qualification.

For the time being, where a CAFC panel’s decision de facto contradicts the refined SPL paradigm defined by *Mayo/Alice* and IEG – though it believes/promises the opposite – the latter should explain this clearly and stay on its course.

7.) Does the FSTP-Test clarify all these new notions’ meanings and their correct use?

YES – as it totally clarifies the new notions’ meanings by completely showing, in what context of an ET CI’s SPL test these notions are used and checked how for what purpose – which clarifies also totally their correct use.

Note: The FSTP-Test also warrants that these notions cannot erroneously be used in/for another purpose than the one defined by the SPL – in the Supreme Court’s above quoted line of decisions. Thus, the structure of the FSTP-Test embodies a (graph-)mathematical correctness proof of the FSTP-Test’s implementation of the requirements stated by 35 USC SPL, the 4 sections of which model the society’s 10 concerns to be taken care of by the SPL (shown by FIG 1). The only exception is the incorrectness of the input provided to it by its user, but even here is warranted that this input, true or false, is correctly used (as already said).

8.) Does the FSTP-Test enforce the correctness use of these new notions?

NO – the reason being: For the correctness of these notions’ use in an FSTP-Test holds, what holds for all algorithms, namely: “Garbage in, garbage out” [176].

As mentioned above in 7.), the input prompted from the user – confirmed by the “(person of) pertinent ordinary skill and creativity, posc [57]” or not – is in the FSTP-Project currently only occasionally (semi-)automatically checked for correct-

¹¹ The CAFC’s recent *Myriad* decision shows that using the BRI^{pto}, in testing an ET CI for satisfying SPL, disables these new *Mayo/Alice* notions in two different ways of enforcing conflict-freeness between courts SPL precedents and/or the IEG. ■) Firstly, *Biosig* unmistakably declared that using the BRI^{pto} in an ET CI’s claim interpretation is a legal error – concurring with the result of the scientific investigation of this question – and thus disables starting, for this ET CI, construing its claim construction (see 2.); hence, stating the SPL-conflict-freeness as to this ET CI is a priori barred. ■) Secondly, due to its use of the BRI^{pto} – as [163] shows – the CAFC here is misled to over-/misinterpret *Mayo* in that the BRI^{pto} misleads/encourages the claim interpreter to erroneously assume, an invented method’s/system’s/product’s property – in *Myriad*: to indicate somewhat specific – may by the BRI^{pto} be interpreted as being the same as applying this invented method/system/product the way for which it was designed to be applied (which holds for *Mayo*’s non-patent-eligible resp. ET CIs).

But, this assumption as to BRI^{pto}’s capabilities is wrong: While the administration of *Mayo*’s drug may potentially be performed for curing a variety of not yet identified diseases (which would render a patent on this drug preemptive), *Myriad*’s method/product indicates only this identified specific somewhat. I.e.: A patent on *Mayo*’s ET CIs were preemptive, one on *Myriad*’s ET CIs is nonpreemptive as it indicates high potentials of solely a specific cancer – and the BRI^{pto} can’t fix this fundamental difference.

This false assumption by a CAFC panel is due to its not being aware of the semiotics *Mayo/Alice* defined and require to be used – as shown by the FSTP-Test. A simpler example of this semiotics: Take ET CIs, both degravitating your body: One in driving a vehicle, and one if you use it in driving a vehicle (but potentially working also stationary): The latter one is a *Mayo* case, the former a *Myriad* case.

ness by “semantics routines”. Already today more such semantics checks are possible, and in the future one may expect that these would cover most of such input.

But, irrespective of the kind of input while an ET CI – any such input is next to trivial pose knowledge, i.e. is easily verifiable by any court simply by double checking it, if necessary by expert testimony or alike – as it refers, without any exception, just to BED-crCs of the patent under FSTP-Test, more precisely: just to BED-crCs of an ET CI of this patent. Thereby the respective BED-leCs are ET CI independent (except the MUIs in this patent legally supporting crCs), and their correctness is hence auditable/assessable, once and forever for one implementation of the FSTP-Test by one of the worldwide well-known auditing firms.

9.) Does the FSTP-Test quantify any ET CI by these new notions as implied by Mayo/Alice?

YES – the reason being: The Supreme Court’s *Mayo* and *Alice* decisions, both implicitly but nevertheless clearly require two different quantifications of the ET CI being tested for it satisfying SPL, as explicated in more detail by [175]. They here are called ET CI’s “*Mayo* quantification” into its set(s) of generative inCs, and ET CI’s “*Alice* quantification” by its set of “ET CI as a whole indicators”.

10.) Does the FSTP-Test represent the result of science? Or only of some changeable voting?

YES and **NO** – The FSTP-Test is a logic translation of the Supreme Court’s above quoted line of decisions, i.e. its interpretation of the meanings/pragmatics/semiotics of 35 USC §§ 101/102/103/112 as to the needs of emerging technology inventions, the basis of the US society’s wealth preserving. Hence, the FSTP-Test represents the result of the scientific analysis of a whole series of unanimous and consistent/consequential decisions. I.e., it represents not some changeable voting.

This concurs with SPL’s extreme amenability to scientification – due to the peculiarities of inventions – which moreover is indispensable for emerging technology ones [175]. Putting this in terms of Analytic Philosophy: ET CI’s SPL precedents is not dealing with legal-only and hence vastly irrational problems, but is tied into the framework of total rationality, similar to & leveraging on basics of Mathematics, i.e. is an emerging exact sub-Physics science, the only one [7⁹,182].

11.) Does the FSTP-Test clarify the line between questions of facts and questions of law?

YES – Even by its recent *Teva* decision [172], the Supreme Court did not yet clarify procedurally, just declaratively, how to separate the CAFC’s from district courts’ competences as to an ET CI’s claim interpretation and/or construing its claim construction^{12.b)}. Yet, *Teva* confirms the capability of the FSTP-Test to procedurally determine, whether a district court committed for an ET CI, in one or both of these processes (see 2.)) a legal or a “clear factual error”: One simply needs to determine, whether one or both of them comprise such an or a legal error, in one of their alias FSTP-test1-10 invocations and/or therein – otherwise the CAFC is indicated to be not entitled to redo one or both of them *de novo*.

¹² .a) e.g., using the BRI^{pto}.

.b) e.g., ignoring and/or misinterpreting the semiotics defined by *Mayo/Alice*.

12.) Does the FSTP-Test really warrant an amazing increase of ET CIs' efficiency and robustness?

YES – the reason being: This increase of any ET CIs' efficiency and robustness is caused by the practically and fundamentally enormous advantages embodied by the FSTP-Test, induced by the Supreme Court. Their importance comes on top of and by far exceeds the importance of all the above explained methodological consistency aspects of the new notions introduced by *Mayo/Alice*.

This suddenly and unexpectedly emerging patent/innovation technology/science [182] – using semi-/highly-automated “innovation expert systems, IESes” [161] – is of enormous

- practical importance not only due to the ongoing explosion of the number – seen worldwide – and complexity of patenting activities as to ET CIs, but also due to an increased need of open, speedy, trustworthy, dependable, and technically unquestionable PTOs, patent law firms, and for such patenting issues qualified legal courts eventually involved in their disputes, as well as due to the needs of the innovation/patenting managements of many private/public ET CIs creating entities, and
- fundamental importance due to its paradigm refinement of the whole patenting/innovation business – as induced by the Supreme Court's above quoted line of decisions and the new notions these introduced into SPL precedents about ET CIs – which led to developing
 - on the one side, such powerful tools as the FSTP-Test and an IES, which are capable of semi/fully automatically supporting analyzing/attacking/defending any ET CI interactively, in “court-mode” even in realtime, and
 - on the other side, the groundbreaking insights that for any ET CI an unassailable patent may be designed/drafted, and for this ET CIs' “vicinity in inventivity” moreover an it exhausting set of neighboring ET CIs* – being more or less patent-eligible and patentable than this ET CI – may semi/fully automatically be derived [137].

Taking as example the PTO business, this FSTP-Technology enables a today in detail hardly estimable break-through of its efficiency – by a factor of 5, or more – as well as of its quality by a similar factor. The reasons being, it:

- disburdens any examiner from most of his today's work by enabling the PTO to reverse the burden of proving that an ET CI passes its SPL test. To this end, the applicant then had to submit, together with his patent application for this CI, a file for the IES – a so called PTR-DS¹³ [7] – showing that/how this CI passes the FSTP-Test. The examiner then may focus on evaluating only the inputs provided to the FSTP-Test for this ET CI by its inventor resp. patent applicant (post confirmed or not, see 8.) above), i.e. he needs to perform only a small fraction of his today's work. This reversal of proof – together with the examiner's IES'es q/a system – would multiply his capacity of careful patent analysis/throughput.
- enables the examiner of a patent – a priori to him, its inventor/R&D-manager and a posteriori to him, lawyers/jurors/judges/experts in court cases defending/attacking it – to **instantly** access any marked-up unit of information (“MUI”) in

¹³ PTR-DS stands for “**P**air of technical **T**eaching over a prior art **R**eference **D**ata **S**tructure”.

any document¹⁴), which contributes to its patent-eligibility/-ability indication, which enables it to immediately remove **any factual uncertainty about any aspect covered by this MUI** – unless the input derived from this MUI is false (see 8.) above). This is possible only as the PTR-DS may provide (via the IES) **all** meaningful legal argument chains (LACs) as to such aspects/MUIs/... [152].

- not only vastly simplifies/accelerates the examiner's work, but also stabilizes a patent on an ET CI, once granted – occurring then and only then if this ET CI has passed the elaborate FSTP-Test – as to later checks. The PTR-DS works, as to an ET CI, for the IES of a court exactly the same way as for the IES of an examiner and for that of the inventor/applicant/R&D-manager, including showing to them **all** crucial technical, legal, examination, precedents facts of this ET CI and **all** LACs made-up from them (thereby removing legal redundancies between them) – comprising any additional annotations, provided e.g. by the inventor or the posc or the examiner or the – but they all also could use, via the Internet, the same incarnation of an IES.

The just described change of today's mode of operation of a PTO will be nothing else but making the PTO operate the same way as a building supervisory authority: The latter would not even think of determining on its own, whether a building is solidly constructed – but a priori require this proof (that this construction is solid) is provided by the building's owner. I.e.: The building supervisory authority would just check and confirm his proof or not, i.e. grant the right to erect/use this building or refuse it. I.o.w.: Today it is impossible to submit to a PTO, with a patent application for an ET CI, also a scientific proof of e.g. this ET CI's definiteness and/or its patent-eligibility and/or its patentability – but FSTP-Technology terminates this dissatisfying situation. It enables an inventor and/or a patent lawyer and/or an IPR manager to run this FSTP analysis of an invention/innovation/TT.0 on its own, prior to submitting it to a PTO together with his/her patent application for it – and prior to such steps, to appropriately add more creativity to the invention/innovation/TT.0 at issue, if needed, and thus generate another PTR-DS reflecting such improvements, too.

As to business/healthcare/green/nano/... inventions – just as to any other model-based technical invention – this reversal of proof is without alternative for the innovation/IPR managements of research/marketing/... organizations or PTOs. The accelerating increase of sophisticated knowledge, on which these inventions/innovations leverage, makes it unthinkable that these managements', PTOs', and/or patent courts' human resources would be able to quantitatively as well as qualitatively keep up with it, already mid-term, not to speak of long term.

To conclude Section I: Many of the issues addressed above either need further explanations – which then are provided by Section III – or are there leading to additional issues, i.e. the former here ought to be understood completely for grasping the latter there.

¹⁴ If these MUIs were encoded e.g. in XML4IP – being an evolving international potential standard for this purpose – then examiners, inventors, lawyers, R&D managers, investors could by private tools communicate over the Internet, as once planned by the PTO's "High-end" project.

II. THE FSTP-TEST – ITS TWO KEY FIGURES AND DETAILED EXPLANATIONS

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 – caused by ET CIs

FIG 1 not only visualizes/outlines the substance of the much higher scrutiny required in claim interpretation and claim construction – here overlapping, see issue 2 in Sect. I – but also explains, by the below list of bullet points, the structure of the total inventivity alias the total (compound) inventive concept of the FSTP-Test, thereby leveraging on the terms/notions introduced by *Mayo/Alice*. The notional refinements they introduced are indispensable for the concise/precise understanding of this whole line of Supreme Court decisions.

- The SPL boxes, on top, show the 4 Sections of 35 USC and their requirements, caused by social concerns, to be met by any TT0 of an ET CI under SPL test.
- The FSTP-Test box, at the bottom, shows the 10 concerns of SPL legally encoded by these 4 Sections' requirements, to be satisfied by this TT0 – and hence to be tested, whether TT0 actually does meet these requirements.
- The bold lines show what is tested (rudimentarily) by a CI's classical claim interpretation/construction – i.e. not caring for the additional needs of an ET CI.
- The dashed lines to test.1/.4/.5/.9 – just as all the dotted arrows from any test.o, $2 \leq o \leq 10$, to any test.o', $1 \leq o' < o$ – show what indispensably must additionally be tested of an ET CI due to its invisibility/intangibility/fictionality by its refined claim interpretation/construction – today not yet noticed by SPL precedents, but embodied by the FSTP-Test (as shown by FIG 2). Due to the sequencing of the test.o's within the FSTP-Test, for the 4 SPL Sections all these checks are passed. Vice versa: Executing a test.o without having passed all test.o', $o' < o$ – as often practiced – may deliver a false result, as it logically is nonsense (even if often indeed not needed).
- All FSTP-Test subtests must be executed for any set S^+ of inventive concepts generating, for the ET CI, a TT0 – i.e., often several (i.e. a finite number of) S sets exist. FIGs 1/2 both assume, for simplicity that just 1 S^+ and TT0 exists.

FIG 2 shows the FSTP^{FFOLLIN}-Test. Before going into the details of the 7 more complex ones of its 10 subtests several (partially redundant) remarks:

- Below the index “FFOLLIN” – indicating/guaranteeing that FSTP-Technology is applicable in any NPS – is omitted just for brevity, i.e. means nothing.
- The FSTP-Test in total checks of a CI, whether its interpretation TT0 is patent-eligible/-able. This is the case iff TT0 meets all 10 concerns legally encoded by SPL, i.e. by 35 USC §§ 101/102/103/112, i.e. passes all the 10 FSTP-test.o on its set $\{BAD-crC0n \mid 1 \leq n \leq N\}US$ (see **test.1(a)**).
- It prompts the user to input, for this CI resp. its TT0 from doc0, first its elements $X0n$ and their modeled compound inventive concepts $BAD-crC0n$ and as many elementary inventive concepts $BED-crC0nk$ as it is able to identify, $1 \leq n \leq N$, $1 \leq k \leq K^n$, which defines CI's S (see the “1 TT0 simplification”).

The user also identifies all BED-crC0kn* subject to a patent-eligibility exemption and inputs the justifications prompted for on lines 1)(b)-4), explained in preceding patent applications referred to above.

- test5 refines the notions used in the Supreme Court's *KSR* decision, as announced above, and hence may impact on test10, explained next.

The *KSR* decision here is split into a *KSR* test (see below) and a *Graham* test – though then not yet needed by the latter, as its notion of “anticipation” then was not yet felt to be necessarily that subtle as to enable preciseness, i.e. tolerated with ET CIs (intolerable) notional “glitches”, which to avoid the subtests 1/4/5/9 are needed. I.e.: *KSR*'s CI is also model based due to the driver's needs, though on a very simple CI and model, just as in *Graham* – thus in both cases these glitches are negligible (but they are there, nevertheless). If this split is not performed – what is logically deficient – there is only a bold line to test.10, i.e. there were no two dashed lines from the 103 box to test5&9.

- test6 (*Biosig*) may be superfluous for a CI – due to test.1 – even if it is an ET CI.
- test9 (RS-Definiteness) must – for any prior art document.i/TTi, if there is any – in principle take all steps peer to those taken for doc0/TT0, but now for TTi over TT0 instead of TT0 over posc. Practically this may be dramatically simplified.
- The FSTP-Test comprises the logically indispensable and hence canonical procedure for acquiring all technically and legally relevant information (today still vastly based on user input only) about a TT0 – provided as its eKNOW storable in a data structure DS – such that any meaningful question about this TT0's satisfying SPL can instantly be derived from DS. This enables amazing reasoning capabilities of the IES.
- The FSTP-Test evidently is not an algorithm/program, but a “program scheme” as known in AIT [2] comprising, for any TT0, any nonredundant algorithm/program necessary and sufficient for this TT0's satisfying FFOLLIN, e.g. SPL.
- The final evaluation of any such (quantified) result delivered by the FSTP-Test is subject to a court's findings as to it – but under much more scrutiny than under any other test discussed hitherto, e.g. the TSM or MoT tests. The FSTP-Test namely is complete and all its checks occur also on the refined”rationality enabling” level of notional resolution – which both hitherto never happened (could happen). **Thus: A TT0 passing the FSTP-Test is legally extremely robust.**
- I.e.: The FSTP-Test 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), i.e. to any one of its interpretations TT0. In other words: The FSTP-Test is the simplest (as necessary) and complete (as sufficient) operational implementation of the *Mayo/Alice* test.

Now in detail to the 10 subtests of the FSTP-Test of a TT0 of an ET CI. The first 3 ones, 1)-3) in FIG 2, prompt the user to tentatively determine for this TT0 alias interpretation of the ET CI a Generative Set, GS(TT0), consisting of $S \cup \{BAD-crC0n, 1 \leq n \leq N\}$, of which the user is supposed to prove by the following 7 subtests that TT0 indeed satisfies SPL – by justifying of all elements of GS(TT0) that they pass them. Assuming the justifications input by the user are correct, the

- **"Independence-Test"** and the **"KSR-Test"** may warrant $\forall s \in S$ not to be anticipated by a FOL expression of the BED-crCs of $S \setminus s$ resp. of posc elements. But: In both tests the posc may state, for an $s \in S \wedge$ a such FOL expression to be so close/equivalent to each other that it would consider s to be anticipated by this expression and hence remove it from S . I.e.: A court may confirm the posc's stated such "tolerances" >0 .

Courts may confirm such tolerance statements by posc \forall 10 FSTP-test.o.

- **"Biosig-Test"** may warrant – if passed – that for any $TT0^*$ other than $TT0$ and its well-defined/decidable S^* , otherwise $TT0^*$ is useless – is decidable whether holds: $s^* \leq s$ ($\equiv TS(s^*) \subseteq TS(s)$) or not $\forall s \in S$: then and only then $TT0$ is called "definite", and the scope ($TT0$) then consists of the set of all such $TT0^*$, for which this relation exists $\forall (s^*, s) \in GS(TT0^*) \times GS(TT0)$. I.e.: Whether $TT0$ is infringed by a $TT0^*$ is easily and exactly/non-deniably determinable.
- **"Bilski-Test"** may warrant that enlarging $TT0$'s truth set implies that a test.1-6 fails. Then $TT0$ is not preemptive and hence not an abstract idea [150,151].
- **"Alice-Test"** may warrant that, with $NK ::= [1, N] \times [1, \max\{Kn, 1 \leq n \leq N\}]$, holds: $\exists nk^* \in NK : \wedge^{\forall nk^* \in NK} BED\text{-}crC0nk \gg \wedge^{\forall nk^* \in NK} \neg nk^* BED\text{-}crC0nk \wedge$ this relation is definite.
- **"RS-Definiteness-Test"**, FSTP-test9, may warrant – after having received from the user $\forall 1 \leq i \leq I$, all $BAD\text{-}crCin$ peer to $BAD\text{-}crC0n$, $1 \leq n \leq N$, and evaluated their interrelations – that over $TT0$ the "anticipation/non-anticipation, ANA" matrix of RS is well-defined/decidable: On any of its $I+1$ lines its $K ::= \sum_{1 \leq n \leq N} K^n$ column entries show, which of the K peer $TT.0$ entries (on its line 0) is anticipated/non-anticipated by this TTi -line entry – leading to setting of the ANA matrix its

$$BED^*\text{-}inCik ::= NA \quad \forall 0 \leq i \leq I \wedge 1 \leq n \leq N \wedge 1 \leq k \leq K^n \wedge$$

$$BED^*\text{-}inC0k ::= A \quad \text{if } BED\text{-}inC0k \in \text{posc} \wedge$$

$$BED^*\text{-}inCik ::= A \quad \text{if } BED\text{-}inC0k = BED\text{-}inCik, 1 \leq i \leq I;$$
- **"Graham-Test"** may warrant – if, for $TT0$'s inCs in a single $BAD\text{-}crC0n$, "cherry picking" of anticipations from different TTi 's is forbidden, i.e. if such inC-searches for any $BAD\text{-}crC0n$, $1 \leq n \leq N$, are limited to solely a single peer $BAD\text{-}crCin$ of some TTi , $1 \leq i \leq I = |RS|$ – that the semantic height of $TT0$ over RS is sufficiently large. This determination requires generating over RS the set of all "anticipation combinations, ACs" peer to $TT0$ and searching therein for the ACs of minimal distance to $TT0$ by proceeding as follows: Automatically deriving from the ANA matrix for any of its "BAD-crC0n columns", $1 \leq n \leq N$, all the i 's $\in [1, I]$, the $BAD\text{-}crCin$ of which are closest to $BAD\text{-}crC0n$, i.e. have the minimal number "dn" of distinctions between both expressions – whereby Dn denotes the number of such minimal $BAD\text{-}crCin$'s in $BAD\text{-}crC0n$ column n – and combine from the so defined N sets $\{BAD\text{-}crCin\}$ the set of $\prod_{1 \leq n \leq N} \{ACs\}$, each such AC having the minimal semantic height of $\sum_{1 \leq n \leq N} dn$ over $TT0/S$.

The functionalities of the 10 test.o's are precisely specified, once the inCs of $GS(TT0)$ are mathematically defined – also if for an ET CI holds $|\{GS(TT0)\}| > 1$. This is of particular interest in R&D control, as outlined in Section III.

SPL box (e.g. 35 U.S.C)

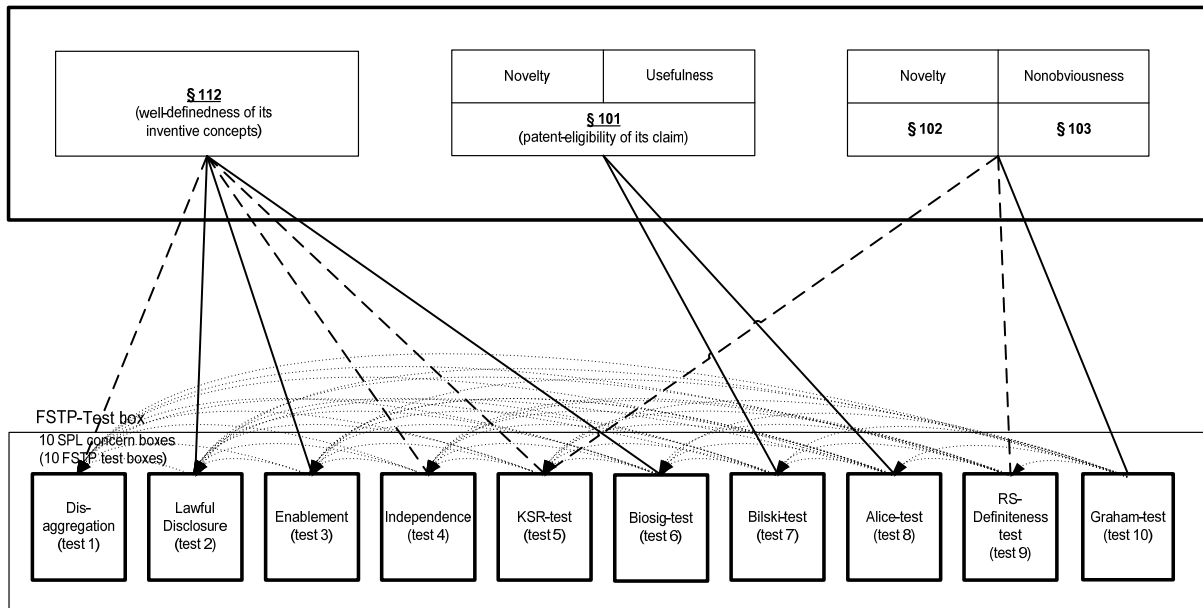


FIG 1

A computer implemented method, called **FSTP^{FFOLLIN}-Test**, for testing

- under a given Finite First Order Logic Legal Invention Norm, FFOLLIN, a given Claimed Invention, CI^{FFOLLIN}, which has a given finite number of given interpretations TT0^{FFOLLIN}, which is represented by TT0's Generative Set GS(TT0^{FFOLLIN}) abbr. S^{FFOLLIN},
- TT0^{FFOLLIN} consisting of S'^{FFOLLIN}::={BAD-crC0n^{FFOLLIN}/∇1≤n≤N}, S^{FFOLLIN}::={BED-crC0kn^{FFOLLIN} | 1≤n≤N : BAD-crC0n^{FFOLLIN}=∧1≤kn≤KnBED-crC0kn^{FFOLLIN}}, and S^{FFOLLIN}=S'^{FFOLLIN} ∪ S^{FFOLLIN},
- S^{FFOLLIN} consisting of the set of all binary abstract and elementary disclosed creative concepts, crC0n^{FFOLLIN}, of all X0n of TT0^{FFOLLIN} (as tested below),

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

- whereby FFOLLIN is defined to be a conjunction of 10 given **FSTP^{FFOLLIN}-test.o** of any given CI^{FFOLLIN}, i.e. FFOLLIN ≡ ∧1≤o≤10FSTP^{FFOLLIN}-test.o – in the sequel for brevity the index “FFOLLIN” being omitted and any FSTP-test.o abbreviated by just “o”, 1≤o≤10 –

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≤n≤N, ∧ ∇ binary abstract and elementary disclosed creative concepts, crC0n, of all X0n, called BAD-crC0n resp. BED-crC0n ■) for |RS|>0 also ∇TTi-(dummy-)elements Xin peer to X0n, 1≤i≤|RS| ∧ 1≤n≤N, ∧ ∇ 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 an S⁺ to input to it:

- 1) (a) S'⁺::={BAD-crC0n | ∇1≤n≤N}, S⁺::={BED-crC0kn | 1≤n≤N:BAD-crC0n=∧1≤kn≤KnBED-crC0kn};
 (b) justof^f∇1≤n≤N: BAD-crC0n is **definite**, “1≤n≤N” and “1≤kn≤Kn” identifying index sets in S⁺;
 (c) justof^f∇1≤n≤N∧∇1≤kn≤Kn: BED-crC0kn is **definite** ∧ ∇ patent-noneligible BED-crC0kn* are identified;
 (d) justof^f∇S⁺∧1≤n≤N: BAD-crC0n = ∧1≤kn≤KnBED-crC0kn;
- 2) justof^f∇S⁺∧∇1≤n≤N: s∈S ∧ BAD-crC0n∈S' are **lawfully disclosed**;
- 3) justof^f∇S⁺∧∇1≤n≤N: **TT0's enablement by S⁺ is lawfully disclosed**;
- 4) justof^f∇S⁺∧∇1≤n≤N: **Independence-test passed** TT0 is well-defined/decidable as to S;
- 5) justof^f∇S⁺∧∇1≤n≤N: **KSR-test passed** TT0 is well-defined/decid. as to posc;
- 6) justof^f∇S⁺∧∇1≤n≤N: **Biosig-test passed** TT0 is definite;
- 7) justof^f∇S⁺∧∇1≤n≤N: **Bilski-test passed** TT0 is non-preemptive;
- 8) justof^f∇S⁺∧∇1≤n≤N: **Alice-test passed** TT0 is patent-eligible;
- 9) justof^f∇S⁺∧∇1≤n≤N: **RS-Definiteness-test passed** RS is well-defined/decid. as to TT0;
- 10) justof^f∇S⁺∧∇1≤n≤N: **Graham-test passed** TT0 is patentable.

FIG. 2

III. USPTO's INITIATIVES FOR RECONCILING THE ACTUAL SPL SITUATION

The below list of 4 “i”-items discusses a mixture of ■) reiterations of terminological/notional clarifications from Section I – such as the fundamental statement by *Biosig* that the BRI^{pt} contradicts the Constitution⁹⁾¹⁰⁾ [185] and questions regarding their aspects not mentioned there [188] – and of ■) new quality efforts by the PTO recently launched, also for supporting the reconciliation of SPL precedents for ET CIs along the very successful IEG line of development [186]. The latter efforts have recently been tackled by the PTO as the perspective common to all its service providing units, called **Enhanced Patent Quality Initiative** (“EPQ Initiative” or just “EPQI”) [189]. It is discussed in i)-iii) below in some circumstantialities, before iv) only briefly asks some specific questions, immediately arising from this EPQI and its relation to the currently encountered period of SPL paradigm refinement¹⁵⁾.

The next 3 bullet points briefly first outline, where and why FSTP-Technology facilitates achieving the groundbreaking objectives of the EPQI, especially performing efficiently and smoothly this SPL paradigm refinement for ET CIs required and launched by *Mayo* resp. by *Alice* – as for these purposes it has been developed.

- While the EPQ Initiative addresses the wide problem area of all questions raised by the AIA implementation or this SPL paradigm refinement, FSTP-Technology deals primarily with the latter aspect and its potentials, i.e. is much less complex.
- For this common ground both, EPQ Initiative and FSTP-Technology, cover all its segments as designed “holistic”. Yet, the latter is worked on since the Supreme Court’s *KSR* decision with much further reaching ambitions, i.e. is years ahead.
- They both are driven by different – though complementary – requirements they must meet: The primary objective of the
 - EPQI indispensably is that of a large national organization and hence driven by immediate-consensus-making needs. By contrast, the primary objective of
 - FSTP-Technology is that of an excellence boutique and hence driven by striving for scientifically assessable efficiency increases of big problem solutions – here of solving the big problem to protect ET CIs by SPL precedents.

These 3 bullet points will help, in what follows, to immediately recognize that/where/why FSTP-Technology greatly supports the EPQI, especially the IEG project and all related quality improvements in working with patents. And this holds in particular for increasing their legal robustness and subject matter inventivity, just as for the resp. qualifications by the Internet of all examiners/inventors/lawyers/managers/investors/.../judges/academia (e.g. about the currently in the US NPS occurring¹⁶⁾ paradigm refinement for catering SPL precedents about ET CIs, as required and induced by the Supreme Court’s above line of unanimous decisions.

¹⁵⁾ This as urgent as complex development – triggered by adapting SPL precedents to the US society’s needs to catering innovativity in the whole area of ETs, and hence striving for trustworthiness/dependability – unintentionally must (and implicitly does) strive for the scientification of SPL precedents for ET CIs, as this is the only force guaranteeing to lead (probably rapidly) to a broad consensus about it. Thus, while this Section’s mixture addresses several quite fundamental aspects of this development deserving in-depth discussions, these below nevertheless are highlighted by flashlights, solely [136,182].

¹⁶⁾ – worldwide also soon available for any NPS of local flavor, enabled by FFOLLIN (s. FIG 2) –

- i) **PTO's Enhanced Patent Quality Initiative.** Launched by the PTO early 2015, the IPO homepage summarized its presentation by M. Lee [189]: “*She emphasized excellence in operations, output, and customer service. The office is seeking input on quality-related proposals such as a mechanism for an applicant to request review of a particular application's prosecution, automated pre-examination search, and improved clarity and completeness of the prosecution record [by making claim construction explicit in the record]...*”.

highlights added and [...] quoting EPQI.

It explains, why the PTO since late last year, not only monthly invites the whole “patent in-crowd” to in-depth quality assessment discussions, primarily as to the above explained paradigm refinement for SPL precedents on ET CIs and its implications (see Sec. I). As shown in **ii)** below, the PTO by these discussions also has achieved already – in a successful consensus building manner [186] – a tremendous progress in stepwise removing much of the absurd misunderstandings of the *Mayo/Alice* decisions, initially raging about them in the patent community worldwide (see **iii)** below). This holds, in particular, as to these decisions’ vast overinterpretation practiced by PTO examiners just as lawyers and even several judges, which these same players then broadly and excessively topped by performing oversimplifications of the involved ET CIs’ claim interpretations [163] – simply by ignoring of these ET CIs’ their decisive limitations^{9),10)} [163].

Fortunately, meanwhile there also are judges/panels/courts applying the due scrutiny in interpreting the above line of Supreme Court decisions on an ET CI just as in the latter’s claim interpretation, as shown by the CAFC’s *DDR* decision [160,163] – their implications being elaborated on in **ii)** and **iii)**.

And, equally fortunately and extremely importantly, the PTO concurs:

- As the second highlight indicates in the above EPQI summary, and [190] further going clarified, that the PTO will require from its examiners (and hence implicitly also from the patent lawyers) – after some appropriate training period – to start any SPL test of a CI (anyway of an ET CI) by its claim interpretation and include it in the prosecution record, while
- the first highlight in this summary explicitly invites, what FSTP-Technology has developed right from its outset (see Sec. I, issue 12) & **iii)** below).

- ii) The IEG and claim interpretation reconsidered.** What originally started out by the PTO for its examiners – instantly after the Supreme Court’s *Alice* decision and then being a dissatisfying comment on it – has meanwhile completely changed its character. As [160] explained, today the PTO’s Interim Eligibility Guidance (“IEG”) is a clear statement, how *Mayo/Alice* require an ET CIs claim interpretation and claim construction is to be performed (see Sect. I.2)).

The IEG’s still remaining deficiencies (identified in [160] and in Section I) should be removed further going, especially its non-separating interpreting and construing a claim (see Sect. I.2)). Not being aware of this fundamental

difference – as again evident with most speakers at the PTO/IPO day, hence to be countered by the final version of the IEG – disables them to meticulously distinguish, at any point in time, in which of both totally different processes they actually are involved when testing a CI for satisfying SPL.

Many court decisions as to such tests of ET CIs suffer from hurrying to its claim construction from an incomplete claim interpretation, as e.g. recently occurred in CAFC's Myriad decision [163]. Usually this legal error of oversimplifying the ET CI to be put into relation to *Mayo/Alice* – this oversimplification being caused by this ET CI's incomplete claim interpretation – then is topped by the additional legal error to overinterpret the latter.

In spite of that well-known untenable phenomenon, in particular with PTO examiners, the IEG does not yet explicitly warn of this momentarily very popular legal error. Even worse: It invites to commit it by prompting to use the unlawful BRI^{pto} for claim interpretation – what then almost always leads to ignoring some limitation crucial for the ET CI's working as disclosed by its specification – i.e. to prematurely focus on the *Mayo/Alice* patent-eligibility test. I.e.: A clear hint onto this often legal errors generating “BRI^{pto} problem” is definitively indispensable, in the next version of the IEG (and in the MPEP).

iii) **This refined claim construction requirement's broad dissemination problem.**

The EPQI in i) is by itself incapable of rapidly solving this broad dissemination problem of the knowhow about the refined claim construction requirements as to ET CIs stated by the above quoted line of Supreme Court decisions or at least starting providing teaching material for this rapid dissemination. There are – repeatedly stated [188] – at least the 3 below reasons for these evident difficulties the EPQI encounters as to its resp. training objectives:

- The subject matter of the paradigm change for ET CIs and its indispensability is neither self-explaining nor easily grasped even if vastly explained
- The IEG is – and must remain, for brevity reasons – a document stating a very good legal justification of a with all likelihood stable consensus between the resp. PTO experts and a small in-crowd of non-PTO SPL professionals about their common understanding of the Supreme Court's *Mayo/Alice* requirements. I.e., it does not comprise and cannot provide any didactic glue for achieving this fast dissemination elaborated on above – meaning transferring this new SPL knowhow not only to the locations but also into the heads of the resp. addressees.
- Even within this in-crowd and set of experts, nobody hitherto emerged owing the potentials just described for generating this didactic material necessary – and even if it would take him/her years to deliver it.

By contrast, FSTP-Technology has compiled a set of FAQs providing this glue, most of them covering the decisive statements of the above line of decisions, too, and much simpler than the ones elaborated on in this paper – and is rapidly expanding this set towards its completeness as to SPL issues. It

is planned to release this set together with the first prototype of the IES by mid 2015, for retrieving these FAQs when needed by its real life show cases.

iv) **Impacts of the above on the IEG and further clarifications of SPL notions.**

The subsequent 9 questions are not of the caliber of the preceding ones – and many more such easy-weight questions exist. But, the uncertainties they embody nevertheless may hamper unfolding the enormous full legal potentials of SPL precedents for ET CIs (see Sec. I) as prompted by the Supreme Court’s by its above quoted line of decisions and scientized by FSTP-Technology – namely by barring the US legal system from consensually pursuing the so indicated path of development of refining the current SPL paradigm, but cling to the coarse one sufficient for CT CIs. Hence these uncertainties ought to be urgently removed on the basis of FFOLLIN.

This paper unfortunately cannot already provide their clarification – they will be delivered with [182], as there is no stumbling block for consistently expanding the hitherto clear understanding of this refined SPL paradigm and its implications (as caused by its FFOLLIN) to the extent that also the below questions today remaining unanswered will have their unquestionable replies.

Yet, some principle clarifications (as presented by the preceding elaborations of this paper) as to the questions concerning the SPL paradigm refinement currently evidently encountered – in particular by some panels of the CAFC, e.g. its DDR decision – should be integrated into the next version of the current draft of the IEG, for showing its readers the whole problem area of SPL precedents recognized by the Supreme Court to come along with ET CIs.

Providing the “big picture” into which the IEG belongs would not only greatly facilitate these readers in understanding the IEG. More importantly, as didactically decisive: It would prevent their being frustrated, and hence giving up any attempt to achieve this understanding, by not being told – and currently not having any chance to find out on their own – what this big picture comprises, why it cannot be avoided, and how it must be approached and read for clearly/easily/correctly and with fun understanding the IEG.

The following sequence of questions, raised during the PTO/IPO-EF day – none of them is trivial, as it occasionally may seem – is incidental:

- (1) What are the implications of the e.g. *Markman/Teva/Cuozzo* decisions on claim interpretation and on claim construction? How are these implications reflected by the FSTP-Test?
- (2) What notions of the term “patent quality” exist pre- and post-*May/Alice*?
- (3) What different notions of the term “abstract idea” are unnoticed mixed-up?
- (4) May congressional impact improve the current SPL precedents?
- (5) Is the current SPL precedents in the US shifting ET R&D to Europe?
- (6) What is the reason of abandoning the clear notions SPL is based on?
- (7) May patent-eligibility and nonobviousness occasionally be the same?
- (8) May a patent-eligibility test of an ET CI serve as a “coarse filter” up-front?
- (9) Does a fundamental difference exist between the § 112 and the §§ 101/102/103?

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*FSTP = facts screening/transforming/presenting
(Version_of_10.03.2015, i.e. of this paper, see^{*)})*

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