

Boon and Bane of Inventive Concepts and the Refined Claim Construction in Substantive Patent Law (SPL) Precedents of the Supreme Court

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Extended Abstract

The Supreme Court has taken US SPL precedents, and with it all IPR precedents in emerging technologies [35], to a higher level of development for adjusting it to the needs of inventions/creations in emerging technologies/science, e.g. in social/life/nano/business/communications/information/.... areas. In any school of thinking a change to a higher level of development causes friction.

Such friction also arose in the US Highest Courts' SPL precedents. This Advanced IT paper [2-5,63] tries to help overcoming it by showing the pros and alleged cons of the Supreme Court's higher level of development of US SPL precedents – legally/scientifically groundbreaking and decisive for the sustainable innovativity of the US society and its economy – by analyzing SPL's definiteness problem and the CAFC's "insoluble ambiguity" test, the Supreme Court just tackled.

The boon is evident: The Supreme Court's *KSR/Bilski/Mayo/Myriad* line of unanimous decisions shows the way to scientification of SPL precedents for getting the substantive patent law ("SPL") interpretation of 35 USC fit for stimulating and protecting emerging technology inventions. To this end it introduced the notions of "inventive concept" and "preemptiveness of a claim" into patent precedents – thus enabling supporting it by Mathematical Knowledge Representation. Hence, this move enables SPL precedents to deal with emerging technology inventions in a consistent and predictable way. This consistency/predictability was lost, as recently shown by the CAFC clashes: The increased abstractness of such inventions generated increased uncertainties about the established SPL precedents thinking, assuming tangible inventions, if inventions get completely intangible and – even worse – are located on top of vastly vague "models", e.g. the "DNA model" in genetics technology or the "molecular bonding forces model" in nano technology.

The bane is not only that most of the patent business practitioners, including in PTOs on both sides of the Atlantic, don't grasp that the US Supreme Court thus opens new dimensions of stimulating/protecting intellectual properties by IPRs [35], especially emerging technology inventions by patent law – in the US by 35 USC, in Europe by EPC – and thus still reject it: As unreasonably fearing it were only hampering their short term business. These reservations will be soon overcome, by academia and the future "patent support systems", such as the IES [8,32-34,46,47].

The seemingly more substantial bane with this improved understanding of SPL is that technically leveraging on it also makes aware how vulnerable emerging technology patents (applications) are by "indefiniteness attacks". Now is evident: Construing the refined claim construction for a model based claim(ed invention) [18,19], as implied by *Mayo* in line with Advanced IT [2-5,10], is much more complete than the classical claim construction and hence clearly exposes the many issues about which an indefiniteness attack may be launched, by a classical or a refined claim construction. Thus, while a refined claim construction substantially increases the robustness of a patent granted based on it, it also opens a new and very ambidextrous battleground for the prosecution of and especially for a litigation about this patent. I.e.: The higher level of SPL precedents required by the Supreme Court's *KSR/Bilski/Mayo/Myriad* "initiative" [46,47] provides also a guideline for how the notion of indefiniteness of a claim(ed invention) may be easily misunderstood/misused – besides the foreseeable massive increases of creativity in designing inventions and of productivity in handling patents resp. applications due to the patent technology it induced.

The new awareness of the potentials of the notion "indefiniteness" may be expected to lead to a similar hype as the notion of "inequitable conduct" – prior to the clarification of its correct legal meaning by the CAFC/*Therasense* [66]. By its final section this paper outlines that the US Highest Courts could prevent an indefiniteness hype by precedents similar to *Therasense*. The actual early indicators of such a hype [61,64] are namely caused by ignoring the requirements the Supreme Court stated in *Mayo* to be met by a refined claim construction, instead stirring SPL's indefiniteness problem with its vastly unknown potentials prior to this paper. It hence removes "white holes" from the map of SPL precedents, e.g. as to the (in)definiteness problem and its 'insoluble ambiguity' test.

I. Introduction

Just as in the author's earlier publications [5,6,7,...,46,47], e.g. its Amicus Briefs to the US Highest Courts [10,18,19,58], also here is assumed that for the claim(ed invention) to be tested for satisfying "**Substantive Patent Law, SPL**", i.e. for its passing all tests of meeting 35 USC §§ 112/101/102/103, the "**inventive concepts, inCs**" have already been determined which it comprises and it is made-up of, as required by the Supreme Court's *Mayo* decision; here similar descriptive vehicles are also called inCs. The Supreme Court emphasized this far reach of its unanimous decision by asking the CAFC in a whole series of legally quite different cases to reconsider its decisions "in the light of *Mayo*".

Here these inCs are used for showing in the wake of SPL testing a claim(ed invention) its definiteness – an endeavor known for its intricacies [61]. For the purpose of this paper it suffices to understand of a claim(ed invention)'s inventive concept, inC, that it represents – besides an increment of usefulness of this claim(ed invention) [18,19,7] – a property of one of its elements. Thereby any compound inC¹) may be disaggregated into a conjunction of BED-inCs¹), i.e. the claim(ed invention) is of FFOL (finite first order logic), applying for many patents, if not for all [6,7]. Any property represented by a BED-inC has also a set of "**SPL aspects**" [10]. This set causes a complex (in)definiteness recognition problem, on which this paper focuses – showing that the FSTP-Test represents it transparently.

Until, for a claim(ed invention), its compound inCs alias AD-inCs are not yet been determined, i.e. its elements' properties are not yet described by FFOL predicates – neither explicitly already by its specification nor by an elaboration on its specification to this end, later, by e.g. a brief of the inventor – there is no basis, yet, for running on it an SPL test by today's Mathematical KR [5,63], i.e. rationally. So long, this paper refrains from considering this claim(ed invention).

Thereafter, a patent (application) and a therein specified claim(ed invention) may trivially have – in its representation/interpretation by a set of inCs [18,19] – for at least one of these inCs making it up, optional values, which represent this property¹) represented by this inC. Independently thereof, this patent (application) may non-trivially specify for the same claim several claim(ed invention)s – which applies primarily for model based claim(ed invention)s, in particular from emerging technologies, the reasons being explained in [18,19]. Both phenomena are often misunderstood, as recently clarified in [58], as rendering indefinite such claim(ed invention)s or even the whole claim – both being the same if the claim has only a single interpretation and hence only one pair <claim(ed invention), interpretation>.

¹ If, invention depending, this property of an inC is represented by the set as a whole of its optional values, then these values cannot be allocated separately to different interpretations, otherwise they can – mixtures being possible. In some cases this question is related to disaggregating a "**compound**", i.e. an "**Aggregated Disclosed**" inventive concept, "**AD-inC**", into a set of "**Binary Elementary Disclosed**" inventive concepts, "**BED-inCs**", see the below FSTP test.1.

This paper and [60] are part of a patent application [59] for user interfaces ("UIs") of a computer system supporting dealing with a patent (application) and therein a claim with several pairs <claim(ed invention), interpretation>, any pair uniquely identified by a given set of inCs, S, of it and their potentially several meanings in this pair. This causes the complexity of the indefiniteness problem of any SPL test, commented on in [61], elaborated on in [58], and presented by its indefiniteness causes in this paper. It clarifies – whereby [59] is occasionally further going into details than done here – how systematically showing the definiteness of this claim and its several pairs <claim(ed invention), interpretation> is possible, in spite of the complexity of this problem. Thereby it shows that any indefiniteness test is subject to the US Highest Courts appropriate and today not yet existing precedents, as discussed in Section IV.

For its presentation, first terms/notions introduced in [58] already must be elaborated on.

By means of the FSTP-Test of a claim(ed invention) – outlined in Section II and described in more detail e.g. in [10,11,58,59] – any different set of its given inCs identifies exactly one meaning/notion of the term "interpretation" of it¹⁾²⁾. Colloquially speaking, the terms "claim(ed invention)", "**claimed invention**", "**claim interpretation**", "(its) **interpretation**", and "(its) **technical teaching, TT**" are here used as synonyms – though this paper mostly uses the first term for clarity. Any AD-inC or BED-inC therein may be "void": then the resp. element X or AD-inC, to which it is associated, does not exist.

A set of inCs is denoted to "**make-up**" its claim(ed invention), iff the latter by the so identified interpretation passes the SPL test. [7,10,11,18,19,58,63] showed that the pair <claim(ed invention), interpretation> satisfies SPL iff it passes the FSTP-Test. Hence, a set S of inCs of the claim(ed invention)'s does make-up the pair <claim(ed invention), S> iff this pair passes the FSTP-Test. S then is denoted as the "**generative set of inventive concepts, genSinC**" of this interpretation²⁾ of the claim(ed invention), and this pair <claim(ed invention), interpretation> is denoted as "**definite**".

A "**tentative genSinC, tentgenSinC**", i.e. a tentative generative set of inventive concepts, of an interpretation of a claim(ed invention) is defined to be a genSinC, except that for at least one inC in tentgenSinC and/or at least one aspect of such an inC the "**person of ordinary skill and creativity, posc**" [57] is unable to confirm that this inC resp. this aspect of it (representing a part of the "**subject matter which the inventor regards as the invention**", i.e. of the § 112(b) requirement, as *Mayo* explains) is "**particularly and distinctly**" claimed by the specification, as required by § 112(b) – whereby the CAFC allows the posc for its analysis preceding its such (non)confirmation.

² An interpretation of a claim(ed invention) may comprise infinitely many whatsoever different inventive embodiments. A specification of a hypothetical claim(ed invention) is trivially construable. If in this interpretation a set of these inventive embodiments is to be singled out to not belong to it, this is to be achieved by an additional inC or value. Thus, by *Mayo*, a claim(ed invention)'s interpretation may have different embodiments here not distinguishable, as of identical genSinC. I.e.: A claim(ed invention)'s different interpretations – if it has any – are identified by their different genSinCs¹⁾. Its different embodiments don't render it indefinite, but definite!

For convenience, the genSinC and tentgenSinC will often be abbreviated by "**S**" resp. "**tentS**".

Thus, the only interpretation of this 35 USC § 112(b) requirement – as understood by the CAFC (just as by Advanced IT, as explained in [58]) – implies, in the light of *Mayo*, for such a pair:

"An AD-inC just as a BED-inC is – by § 101 representing "something useful" for the US SPL of a pair <claimed invention, S> – defined to be "definite" iff the posc can decide that this "something useful" is ex- or implicitly, anyway clearly, identified in and described by its specification and/or by the posc's ordinary skill and/or ordinary creativity."

(see Section IV for how future Highest Courts' precedents as in *Therasense* may enforce it)

Hence, a tentS is an S iff all inCs \in S are definite. The same holds for a tentative claim interpretation (see above). A claim(ed invention) for which no tentS alias tentgenSinC exists – i.e. if the posc states that there is no tentative interpretation of it, as in its resp. tentS at least in one inC at least one aspect clearly fails to meet the requirement stated by SPL to be met by it for making this pair <claim(ed invention), tentS> patentable or only patent-eligible³) – this interpretation is of less interest in this paper. Such an interpretation of a claim(ed invention) then is denoted to be "**definitively inadmissible**" for it.

Accordingly, a claim(ed invention) is denoted to be "**indefinite**" iff there is a tentative interpretation for it, but only as long as this claim(ed invention)'s tentS is not an S – which need not be clear for the posc initially but is clear at the latest after the amount of effort allowed to it has been exhausted. A claim(ed invention) is denoted to be "**definite**" iff there is at least one interpretation with an S. If it is not even indefinite, it is of less interest in this paper. Such a claim(ed invention) then is renamed as "**definitively meaningless**" as for any of its interpretations its tentS comprises at least one inC that fails to meet at least one requirement stated by SPL to be met by it for the pair <claim(ed invention), this interpretation> to be patentable or only patent-eligible³).

The message conveyed by this paper is divided into 4 Sections, of which this elaborate Introduction is the first one.

- Section II presents the indefiniteness problem in its simplest form, namely if for a claim(ed invention) there is only a single interpretation – which nevertheless enables showing the principle problems underlying the indefiniteness problem.
- Section III shows the steep increase of the complexity of the indefiniteness problem for model based claim(ed inventions).
- Section IV discusses primarily the need of appropriate Highest Courts' precedents for excluding that the indefiniteness problem may be misused, as the "inequitable conduct" problem has been misused until the CAFC's *Therasense* decision, after first briefly putting the spot lights on specific questions

³ By *Mayo* and the NAIIO test (see **) below) a tentative interpretation is potentially "preemptive" and hence, alone because of this reason, is not patent-eligible even if there is no other reason for qualifying it non-patent-eligible.

raised by heavy weight firms (as leading segments of the emerging technology world market) by their comments as to the indefiniteness problem – and showing that their misrepresentations of this problem actually facilitates recognizing it clearly.

Finalizing this Introduction a remark is in place, which continues the preceding sentence, as to the question asked by this paper's headline.

Many patent business practitioners still reject this apparent increase of notional complexity that the Supreme Court introduced into the established SPL precedents by the *Mayo* decision and its inCs and alike, as they fear it hampers their everyday business, i.e. they still consider it as bane. But, actually, there is absolutely no increase of the notional complexity of the established "SPL precedents thinking", but just the cognition of the complexity it embodied since ever – which to simply ignore permanently has been possible as long as inventions and claims were dealing with only tangible and visible, so-called MoT type, inventions [26]. Yet, this is often no longer the case with the specification of a model based invention and a claim claiming it, why the Supreme Court stepped in by its *Mayo* decision. But such a claim is also much more amenable to multiple interpretations, due to this total lack of intuition in interpreting it and/or as to its reach/scope. Enabling by *Mayo* to remove this long time existing gap of rationality in claim interpretation, thus improving the understanding of the CAFC's indefiniteness test [58] and of the FSTP-Test, is hence not a bane but a boon of the *Mayo* decision.

The whole boon of the *Mayo* decision is implied by its groundbreaking requirement statement of how to construe, for a model based claim(ed invention), the refined claim construction – which also implies the need of getting much more precise about this claim(ed invention)'s interpretation(s). Meeting these clearly and unmistakably stated *Mayo* requirements to be met in interpreting a claim(ed invention) – first of all, to mandatorily use inventive concepts, inCs [7], for identifying/describing this claim(ed invention)'s total inventivity [18,19] – enforces a scrutiny in performing this claim construction, which induced supporting this refined claim construction by Advanced IT and thus developing the FSTP-Test for it, the passing of which is necessary and sufficient for the claim(ed invention) to satisfy SPL.

This paper shows that *Mayo* might have become a problem – due to its refined claim construction's increased complexity implied by its increased preciseness/completeness alias rationality, compared to the classical imprecise/incomplete *pre-Mayo* claim construction – if *Mayo* had not also enabled and induced developing KR technology, which enables analyzing and handling this complexity and moreover increases the predictability of the so further going consistent SPL precedents. This development towards the reconsolidation of SPL precedents may be expected to take place pretty rapidly, due to the enormous increase of productivity of working in the patent business area, enabled by this *Mayo* induced "patent technology" [9].

II. The Basic Indefiniteness Potentials Due to the Complexity of Any Indefiniteness Test

The following paragraphs again repeat much of [10,18,19,58]. Moreover, in this Section II only the simple structure of this, in the general case pretty complex, FSTP-Test is explained, skipping many of the causes of an interpretation's and/or inC's/aspect's indefiniteness, to be discussed in Section III.

To begin with, 5 very basic and unrelated to each other mind-setting remarks/reminders:

Firstly: [10,18,19,58] stressed that *Mayo* is groundbreaking for a claim(ed invention)'s SPL test, as it intellectually paves the way for construing its "refined claim construction"⁴) by disaggregating its 4 compound tests under the 4 §§ 101/102/103/112 into 10 FSTP test.o, checking the pair <claim(ed invention), interpretation> for all interpretations whether they satisfy the 11 US SPL concerns embodied by these 4 §§ – definiteness and patent-eligibility being two of these 11 concerns.

Secondly: Applying the FSTP-Test to a <claim(ed invention), interpretation> means construing for this pair the refined claim construction, by the latter's definition. Logically this implies: Stating that this refined claim construction is construable for this pair is equivalent to stating that this pair passes the FSTP-Test. Practically this means: A pair <claim(ed invention), interpretation> passes its SPL test iff it passes the FSTP-Test.

Thirdly, it is worthwhile noticing:

- The FSTP-Test starts with FSTP test.1, which i.) transforms the claimed invention's creative/inventive concepts ("cr/in-Cs"), if "**compound**" or "**not binary**" by "**disaggregation**" into "**binary elementary disclosed (BED)**" inventive concepts [7,10]), and thereby ii.) twice explicitly checks any inC's "**explicit (in)definiteness**" and then 9 times implicitly checks any inC's "**implicit (in)definiteness**" by the 9 FSTP test.o, o=2,3,...,10, as elaborated on below.
- The discussion of the FSTP-Test in Section II is kept very simple – though it shows that it may get voluminous even in this simple case – for i.) not swamping the above introduction of basic terms/notions needed for analysing the (in)definiteness problem, and ii.) facilitating understanding that another potential indefiniteness reason – being (vastly) complexity independent and described in

⁴ *Mayo* nowhere explicitly uses the terms "SPL" or "claim construction" for claim(ed invention)s to be SPL tested. This doesn't mean, *Mayo* would not deal with the notions of these terms [7,10]. The contrary is true: Most of what *Mayo* states are SPL requirements to be met by a claim(ed invention) for its(their) satisfying SPL [19,25,45/ftn5] – be the invention at stake an emerging technology invention or not.

Broadly accepted counter statements against this phenomenon – such as "... there is no claim construction language in *Mayo* ..." or alike about *Mayo* [38] – are absolutely untenable [45/ftn5] as representing wishful but erroneous and hence today totally outdated thinking about the informative power and clarity of natural language wordings [7.ftn1-3], including the pragmatics they may imply without speaking it out explicitly. E.g.: Describing the details of actions for safely moving a car by own power from one location to another one need not explicitly quote the term "driving" – the pragmatics of the meanings of the actions thus described are nevertheless evident: directives (or alike) how to drive this car.

[58.p18], namely the notional overlay of a linguistic legal question and a pragmatic legal question – also exist when dealing with a claim(ed invention) having only a single interpretation, as it often is the case with MoT type claim(ed invention)s. By contrast to them, specifications of model based claim(ed inventions) tend to enable multiple interpretations of it, alone due to its dealing with intangible and invisible subject matter often felt to require a highly redundant specification, whereby any redundancy may cause another, more or less varied, interpretation of the claim(ed invention). The solution to the cognition problems touched on here, and earlier in [5], is still hidden. But, theoretical work on it in Mathematical KR, for identifying the firm ground where a line may be drawn for separating interpretations not deserving separate patentability from those deserving it, and partially clearer represented in [63], approves what is mentioned here.

- The FSTP-Test will get logically very complex in Section III. Discussing, in this paper, this complexity as reason of indefiniteness, additional to and blurred by the two just mentioned reasons, shall demonstrate, how many details and their sophisticated interrelations are involved in any claim(ed invention)'s test for its satisfying SPL – any such detail and/or its interrelations being a potential source of indefiniteness of its own. Pre *Mayo*, it was impossible to understand this amount of sophisticated but very real complexity, in particular as to the indefiniteness question [61,64], as shown in Section IV. This mentally unmanageable high complexity will prove the broadly accepted belief to be just wishful thinking that a claim(ed invention)'s SPL tests were rationally decidable without scientific scrutiny, e.g. by applying the FSTP-Test. The only way to recognizing that and why this belief is indeed wrong is probably possible only by applying mathematical scrutiny to analyzing SPL testing, e.g. as performed by the for satisfying SPL minimal FSTP-Test. It shows in Section III that this problem can be definitively resolved/avoided only, if the easy misuse of indefiniteness attacks is barred legally by US Highest Courts precedents – otherwise it prevails, in spite of all patent technology.

Fourthly, also the broad responsibility of the posc as to this indefiniteness question has hitherto not been considered seriously – it today namely accepts that the posc may make not only subject matter but also clearly legal decisions. I.e., today the posc may arrive at a 'definite' qualification, without knowing the additional legal context, as is the case with the 'insoluble ambiguity' test, discussed in detail in Section III – though it may happen already in this simple case of indefiniteness dealt with in Section II. More such legal decisions must be made by the posc in several test.o due to legally diffuse situations – e.g., what is meant by "independence" of inCs implied by the "distinct" requirement stated by §112(b)?

Fifthly, construing the claim construction for a claim(ed invention) – i.e. performing "claim interpretation" of the claim claiming this invention, see the Introduction – does not mean testing its features/limitations (since *Mayo* its 'inventive concepts', i.e. much more concise versions of them [19,18,7]) only separately, one after the other, feature/limitation/inventive concept wise, as to their satisfying § 112.

But, "construing the claim construction for a claim(ed invention)" means and has ever meant – though often not noticed, as referring to a complex five parties relation, and due to its fundamentality not being cared for in every day patent business – establishing the whole "claim construction" for this claim(ed invention). In other words, "construing the claim construction for a claim(ed invention)" means putting-up from the invention's elementary building blocks – its features/limitations/inventive concepts – the complete mental construct representing the invention created by an inventor (1) and being claimed by the patentee (2) by this claim, whereby this claim moreover claims granting by the USPTO (3) patent protection for the so represented invention. The latter claim is to be approved by the USPTO if and only if this mental construct alias this so represented claim(ed invention) meets the requirements stated by the US (4) in terms of its law (here: 35 USC SPL) as interpreted by this Court (5).

Hence, this mental construct alias this so represented claim(ed invention) alias its so designed claim construction got to be construed such that eventually the final decision maker, the Supreme Court – and before the CAFC and a District Court – is enabled by it to decide about the claim(ed invention)'s patent-eligibility and patentability and to communicate its decision to the public by means of it.

Consequently, this mental construct alias this so represented claim(ed invention) alias its so designed claim construction got to be concise and complete [18,19,25]. The Supreme Court has in its *Markman/KSR/Bilski/Mayo/Myriad* decisions ex- and/or implicitly requested a so designed claim construction alias claim interpretation. This interpretation (see the Introduction) is to be construed from the specification of the patent representing this patent protection granted. These requests by the Supreme Court evidently culminated in the requirements stated by *Mayo* to be met by any claim interpretation.

Given this evident – for not to say: only reasonable – meaning of the term 'claim construction', in particular in the light of *Mayo*, it is grossly misleading that phrases are widely used, such as "construing a claim", or even worse "construing a limitation", At the point in time, when a claim construction is to be construed, the claim and/or a limitation cannot be construed anymore, as it/they then exist already – though sometimes may turn out to be indefinite, in the wake of the refined claim construction (see Section IV). Such sloppy wording is often understood as justifying to apply the "broadest reasonable interpretation" to a claim – not to a claim(ed invention)!!! – ending up in a totally invention independent claim interpretation and the nonsense then resulting, as shown by concrete examples and criticized e.g.⁹⁾ in [45]. I.e., applying the BRI and completely ignoring the invention thereby is nothing else but construing a new claim – not a "broadest reasonable interpretation" of the true claim(ed invention) [45,21,37]. Section III elaborates on claim(ed invention)s with several interpretations – but none of them can be broadened or tightened!

A complete claim construction is often much more limiting the claim(ed invention) than some loosely dangling "claim limitations" for it, fabricated in "free-style", for somehow complementing its

classical claim construction such that both together – the classical (hopelessly incomplete) claim construction with this free-style complement – look like establishing the claimed invention's complete SPL test. But such pretense is legally untenable, as it always remains definitively incomplete! [18,19,25]

The structure of the FSTP-Test, in terms of the FSTP test.o, o=1,2,...,10, then is:

- test.1** The FSTP-Test is executed \forall claim interpretations, with the **posc justified definite disaggregation** of the compound inventive concepts, after the **posc justified these as definite** for the set of interpretations, Sol, selected in (b)/(c), comprising the steps: It
- (a) prompts the user for the claim(ed invention)'s and prior art's docs with their "**marked-up items, MUIs**";
 - (b) prompts \forall Sol and for any Sol's $\forall AD\text{-}crCin\text{-}Xin ::= \bigwedge_{1 \leq i \leq |Sol.IN} AD\text{-}crCin\text{-}Sol.in$ in doci-MUI's, $0 \leq i \leq |, 1 \leq n \leq N$;
 - (c) prompts for the posc's definiteness justification of \forall compound inCs in Sol, i.e. of $\forall AD\text{-}crCin\text{-}Sol.in$;
 - (d) prompts to disaggregate $\forall AD\text{-}crCin\text{-}Sol.in \forall 0 \leq i \leq | \wedge 0 \leq n \leq N$ into $\{BED\text{-}crCink\text{-}Sol.in \mid 1 \leq k\text{-}Sol.in \leq K\text{-}Sol.IN\}$:
 $AD\text{-}crCin\text{-}Sol.in = \bigwedge_{1 \leq k\text{-}Sol.in \leq K\text{-}Sol.IN} BED\text{-}crCink\text{-}Sol.in \wedge BED\text{-}crCink\text{-}Sol.in \neq BED\text{-}crCink\text{-}Sol.in' \forall k\text{-}Sol.in \neq k\text{-}Sol.in'$;
 - (e) prompts for the posc's definiteness justification of its disaggregation in (d);
 - (f) Set $K^{Sol} ::= \sum_{1 \leq n \leq N} K^{0N}$, $S^{Sol} ::= \{BED\text{-}crC0nk\text{-}Sol.0n \mid 1 \leq k^{0n} \leq K^{0N}\}$, with $K^{Sol} = |\{BED\text{-}crC0nk\text{-}Sol.0n \mid 1 \leq k^{0n} \leq K^{0N}\}|$;
- test.2** Prompts for justifying \forall BED-crCs in S^{Sol} : Their **lawful disclosures**;
- test.3** Prompts for justifying \forall BED-inCs in S^{Sol} : Their **definiteness** under § 112.6;
- test.4** Prompts for justifying \forall BED-inCs in S^{Sol} : Their **enablement**;
- test.5** Prompts for justifying \forall BED-inCs in S^{Sol} : Their **independence**;
- test.6** Prompts for justifying \forall BED-inCs in S^{Sol} : Their **posc-nonequivalence**:
- (a) if $|RS|=0$ then $BED^*\text{-}inC0k ::=$ "dummy";
 - (b) else performing **c-f** $\forall 1 \leq i \leq |RS|$;
 - (c) It prompts to disaggregate $\forall BAD\text{-}Xin$ into $\bigwedge_{1 \leq kn \leq Kn} BED\text{-}inCik^n$;
 - (d) It prompts to define $BED^*\text{-}inCik^n ::=$
either $BED\text{-}i\text{-}C0k^n$ iff $BED\text{-}inCik^n = BED\text{-}inC0k^n \wedge$ disclosed \wedge definite \wedge enabled,
else "dummy(ikⁿ)";
 - (e) It prompts for $JUS^{posc}(BED^*\text{-}inCik^n)$.
- test.7** Prompts for justifying by NAI0 test*) on $(S^{Sol}:P.0^{Sol})$: TT.0 is **not an abstract idea only**;
- test.8** Prompts for justifying \forall BED-inCs in S^{Sol} : TT.0 is **not natural phenomena solely**;
- test.9** Prompts for justifying \forall BED-inCs on $(S^{Sol}:P.0^{Sol})$: TT.0 is **novel and nonobvious** by NANO test**) on the pair $(S, \text{ if } |RS|=0 \text{ then } \{BED^*\text{-}inC0k \mid 1 \leq k \leq K\} \text{ else } \{BED^*\text{-}inCik \mid 1 \leq k \leq K, 1 \leq i \leq |RS|\})$;
- test.10** Prompts for justifying \forall BED-inCs in S^{Sol} : TT.0 is **not idempotent** by NANO test**) on the pair $S' \subseteq S$

*) The "**Not an Abstract Idea Only, NAI0**" test basically comprises 4 steps [5,7,10,25,18] – ignoring any prior art document's inventions –:

- 1) verifying the specification discloses a problem, $P.0^{Sol}$, to be solved by the claim(ed invention) as of S^{Sol} ;
- 2) verifying, using the inventive concepts of S^{Sol} , that the claimed invention solves $P.0^{Sol}$;
- 3) verifying that $P.0^{Sol}$ is not solved by the claim(ed invention), if a BED-inC of S^{Sol} is removed or relaxed;
- 4) if all verifications 1)-3) apply, then this pair \langle claim(ed invention), Sol \rangle is "not an abstract idea only".

) The "Novel And Not Obvious, NANO**" test basically comprises 3 steps, checking all "anticipation combinations, AC^{Sols} " of S^{Sol} derivable from any prior art documents' invention in Sol [6]:

- 1) generating the ANC^{Sol} matrix, its lines representing for any prior art document.i, $i=1,2,\dots,l$, the relations between its inventionⁱ.Sol's BED-inCs to their peers of $TT.0^{Sol}$, represented by its columns;
- 2) automatically deriving from the ANC^{Sol} matrix the set of $\{AC^{Sols}\}$ with the minimal number $Q^{plcs/Sol}$;
- 3) automatically delivering $\langle Q^{plcs/Sol}, \{AC^{Sols}\} \rangle$, indicating the creativity of the pair \langle claim(ed invention), Sol \rangle .

The above several interpretations of a claim(ed invention) are managed by the FSTP test.1 in its line (b) by prompting the user for the "**Set of tentative Interpretations, SotI**" and proceeding from there on SotI dependent – see Section III. In Section II SotI contains only a single interpretation.

The FSTP-Test, as presented above, is simplified as its test.o, o=2,...,10, are only shown by their "headlines" (for their details see [5-7,46,47,58]). Independently of this short cut, any "justify" is vague and hence a potential source of another indefiniteness. The "patenting English" language [7,11,10], used for describing the FSTP-Test, presents it as a CII [45], which prompts its user through its execution on a claim(ed invention). For facilitating grasping its working, the below items **i)-v)** compare the FSTP-Test to the CAFC's 'insoluble ambiguity' test. Thereof, **i)-ii)** explain only the FSTP-Test's basics, leaving to **iii)-v)** in Section III the discussion of the FSTP-Test's full complexity, caused by the potentially dramatically increasing number of tests for implicit indefiniteness and the difficulty to arrange them such that it is guaranteed, any potentially indefinite interpretation is found – the felt reasons, why [61] called the indefiniteness problem a "sleeping giant" of SPL.

- i) The CAFC's 'insoluble ambiguity' test qualifies a claim(ed invention) as definite, iff it has at least one non-ambiguous interpretation, which to find may cost the posc a reasonable amount of effort. But, it leaves it to its user, to somehow figure out for a claim(ed invention), whether there is a non-ambiguous interpretation for it, and qualifies it as definite iff such an interpretation is eventually found, no matter by whom and how – if only satisfying SPL, a limitation sometimes overlooked (see Section III).
- ii) By contrast, the FSTP-Test guides the user dependably in figuring this out. It namely systematically checks, for the single interpretation assumed here, whether the then single tentS satisfies all 11 SPL requirements – not just the requirements explicitly stated by § 112, which the classical claim construction and with it the CAFC's test assume to be necessarily tested [10,25] – i.e. is an S.

Thus, at least one "implicit indefiniteness" question may be raised by an attacker on a claim(ed invention), in addition to the two explicit indefiniteness questions to be clarified within test.1, being logically basic but nevertheless also attackable. I.e., any inC must be tested at least once – separately or in conjunction with other inCs – in any one of the 9 FSTP test.o's as to its aspect concerning this test.o.

If M is the number of inCs identifying the interpretation of the claim(ed invention), there are 2^*M explicit indefiniteness tests of FSTP test.1 + at least 9^*M tests of FSTP test.o's for implicit indefiniteness, in total 11^*M indefiniteness tests. Of these some may be trivial (e.g. test.3 if no means-plus-function wording is used, or test.8), but others may depend on M, yielding quadratic numerical complexity.

This number of potential opportunities for launching an indefiniteness attack may be large: Some claim(ed invention)s may have for their single interpretation more than 20 inCs, such as that of the author for VoIP telephony [45], currently before the CAFC [38,40,41,63] – thus requiring more than 220 checks.

The reasons why these many potential sources of indefiniteness have not been clearly identified earlier, though they were evidently clearly felt earlier, already 70 years ago [61], is to be seen in the inability to filter out, from the specification of the claim(ed invention), the linguistic notional¹⁾²⁾ problem overlaying the pragmatics notional¹⁾²⁾ problem of recognizing these sources, as explained in detail in [58] and achieved by the FSTP-Test. Both problems could not be recognized prior to *Mayo*, as also explained there – inducing meticulously analyzing the being of inventive concepts as the building blocks enabling to incrementally generate/create a claim(ed invention)'s total usefulness⁵⁾⁶⁾⁷⁾.

⁵ The just mentioned VoIP telephony claim 68 of US patent 7,145,902 has 27 inCs [6,7,8]: This unusually high number of quite different, some of them never heard of before inventive concepts – qualifying the claim(ed invention) 68 as a heavy one⁵⁾ – explains why for the years 1990-2000 Internet telephony was a nightmare for the investors into it; these lost hundreds of millions of US\$ in this first and completely flopping wave of Internet telephony, as the market didn't accept its then low quality and unreliability. The then prior art documents had namely disclosed only a few allegedly peer inventive concepts, all of them very dissimilar – as seen from the point of view of resolving the technical problem to enable Internet telephony of acceptable acoustic quality – to those at issue, in particular not a single one similar to 4 "never heard before"⁶⁾ inventive concepts, which the claim(ed invention) 68 embodies.

Nevertheless, by arguing with technical and legal nonchalance [21,37] known from the strange USPTO BRI guideline [14,45] and accordingly nonchalantly ignoring the Supreme Court's *Mayo* requirements as to a refined claim construction (for a model based invention, what the communications technology invention of claim 68 is, as nothing in it deals with tangible or visible subject matter), the CAFC nullified claim 68 even more rigorously than the USPTO, which had confirmed a dependent claim [62]. SSBG is still working on this case.

⁶ Normal patents have a much smaller number of inventive concepts than the just commented on ones. For the novelty of a claim(ed invention) only a single one suffices – and this should be decisive for finding it patentable, in particular, if of the kind of usefulness of this claim(ed invention) which this inventive concept represents, nobody has ever heard before. But note: Any whatsoever inventive concept is indispensably finally – i.e. after sufficiently many notional disaggregations – also only a combination of previously known (and hence non-inventive) concepts provided by potentially ordinary skill and/or therein a model (as explained by the end of Section III), though potentially a never heard before combination and then a never heard before inventive concept. A claim(ed invention) comprising such an inventive concept then might be called a "**heavy-weight**" claim(ed invention), by contrast to a "**light-weight**" claim(ed invention) comprising only 1 or 2 novel but less unexpected combinations of previously known features of their inventive process/system – nevertheless often deserving patentability, e.g. for consistency reasons to the bulk of granted patents.

Note finally: Talking about degrees of (non)expectedness brings up an issue taken into account in the FSTP-Test by the mathematical term/notion of "idempotence" and the similar purely pragmatic term/notion "posc-nonequivalence" – hitherto completely unknown, but from a completeness point of view indispensable – which will be elaborated on elsewhere, also together with the terms/notions of novelty/(non)obviousness/skill and the TSM test, all based on inCs and therefore making a much more precise sense than their original versions.

⁷ Hitherto no indefiniteness attack has been launched against this US patent.

III. The Full Indefiniteness Potential of a Claim(ed Invention)

This Section also repeats much of what has been said in [58] already. Yet this is here much further going elaborated on than there. Indeed, the increased preciseness/completeness of the refined claim construction for a claim(ed invention) enables excluding many of the uncertainties that had to be left open in a classical claim construction due to its lacking of a clear frame work, which is available only since the *Mayo* decision providing it by its new notions of "inventive concepts" and "preemptivity". Finally, this Section will also clarify the notion of the term "model" of a claim(ed invention) and its specification, on which both may be based – as it typically is the case with emerging technology inventions/claims. Not explicitly clarifying the for emerging technologies indispensable notion of "model" in the indefiniteness discussion, might leave the feeling that there is no firm ground for stating the definiteness of a claim(ed invention) basing on this model. But the contrary is true, as explained by the end of this Section III.

I.e., first we become more specific about a claim(ed invention)'s indefiniteness aspects needing clarification on top of the model it is based on, again by comparing the CAFC's 'insoluble ambiguity' test to the FSTP-Test, i.e. by continuing the list of distinctions between them started in Section II.

- iii) Between both tests there is a far reaching distinction, split into two parts: The FSTP-Test
 - 1.) performs this exhaustive search by means of the finitely many inventive concepts' making-up [7] of the claim(ed invention)'s specification, while the 'insoluble ambiguity' test doesn't yet know *Mayo's* notion of 'inventive concept' – explained in more details in 2.) and 3.) – and hence does not know how to make its search being finite and completely exhaustive.
 - 2.) knows from *Mayo* a priori that any inventive concept disclosed by the specification, therein explicitly named or not, may be taken into account in a claim interpretation, while the 'insoluble ambiguity' test doesn't know such freedom/obligation in/to ●) exploring the specification for disclosures of inventive concepts embodied by the invention underlying the specification [45] – i.e. for all finitely many claim interpretations disclosed by the specification – and ●) leveraging on all findings obtained by this scrutiny of searching for all of the only finitely many claim interpretations in the specification [7].
- iv) Another substantial distinction between both tests is: Though the CAFC test and the FSTP-Test share the same notion of "(in)definiteness" of a pair <claim(ed invention), interpretation>, the 'insoluble ambiguity' test might state an interpretation of a claim(ed invention) as non-ambiguous and hence qualify the tested claim(ed invention) or at least this pair to be definite, while the FSTP-Test qualifies one or both of them as indefinite. The CAFC test might namely base its decision on an interpretation potentially not passing one of the 10 FSTP test.o, which would nullify this pair, i.e. this claim interpre-

tation, and hence leave the claim(ed invention) indefinite. In the worst case, the tested indefinite interpretation is the only one of the claim(ed invention), which would make the whole tested claim(ed invention) fail its SPL test and hence would render it definitively meaningless (see Section I). Otherwise, the FSTP-Test would definitively find another claim interpretation passing the SPL test – which then would pass the 'insoluble ambiguity' test, too, although it is unclear whether this interpretation would have been found in the freehanded searches performed by the CAFC test.

Thus, the 'insoluble ambiguity' test is logically a test of a claim(ed invention) resp. of one of its interpretations, the passing of which is only necessary – is even the minimal necessity – for this claim(ed invention) resp. interpretation to be qualified definite. But this passing is not sufficient to this end. I.e., the 'insoluble ambiguous' test is incapable of qualifying a claim(ed invention) as definite.

By contrast, the FSTP-Test is designed, right from its outset, to check all interpretations of a claim(ed invention) for meeting all 11 SPL requirements, including its 2 explicit and 9 implicit definiteness requirements. In the wake of its execution, it thus checks all the criteria, which in total are necessary and sufficient for the claim(ed invention)'s definiteness – although (in)definiteness is just one of the 11 SPL concerns.

I.o.w.: The FSTP-Test finds out, whether no such SPL satisfying interpretation exists, otherwise it identifies all interpretations of this claim(ed invention) which satisfy SPL. The 'insoluble ambiguity' test is incapable of any sufficiency statements, in particular of both the preceding ones.

And in still other words: For a claim(ed invention) its passing •) the FSTP-Test is necessary and sufficient for its being definite, •) the 'insoluble ambiguity' test is only necessary for its being definite but in no way sufficient, and •) any even further relaxed (in)definiteness test than the latter one says absolutely nothing about its being definite.

- v) After these comparisons in i)-iv) of the FSTP-Test with the 'insoluble ambiguity' test, next the complexity of the FSTP-Test as applied under the simplifications of the Section II is compared to its complexity when being applied to a claim(ed invention) having multiple interpretations¹⁾²⁾ and/or at least one interpretation with its S comprising at least one "multiple-value" inC¹⁾²⁾ ⁸⁾. It hence is reasonable to define, for a claim(ed invention), the notion of its "**Interpretation Variable, IVar**" to represent the number of its different interpretations¹⁾²⁾. Such a qualification of a claim(ed invention) was hitherto not known in discussions about the CAFC's 'insoluble ambiguity' test and is in no way manageable by it, but practically being important in the FSTP-Test, as shown next.

⁸ While inCs are principally very simple, as explained in [6,7], the "values" of their domains may be arbitrarily complex, as one immediately sees when taking e.g. the inventive concepts "disease indication", or "chemical complex", or "business order", or "DNA segment", or "car stability", or Note also that any such value may require a separate interpretation¹⁾.

As evidently follows from Section II, for the "**numerical complexity, NCom**", of the FSTP-Test – i.e. for its number of indefiniteness test executions in the FSTP test, $1 \leq o \leq 10$ – when applied to a claim(ed invention) with IVar interpretations and the number $|genSinC|$ of inCs making it up, i.e. $|S|$, holds: $NCom \geq 11 * IVar * |S|$. Thus, this complexity NCom grows at least proportionally with the value IVar of a claim(ed invention), even if in S only a single inC is replaced by another inC – unless one finds out how tests from one interpretation may be reused in another interpretation, which is ignored in this paper.

In the example with more than 20 inCs, used by the end of Section II, if only a single inC had several values⁹⁾, this would raise the number of indefiniteness tests to more than 440.

There is no need to go into further details, in this paper, by explaining the irritations arising in a claim(ed invention)'s indefiniteness test, as this high numerical complexity as such may be overlaid by the two independent of each other notional problems of the representation of the claim(ed invention) in the specification explained above (and in [59]) manageable. The fuzziness of the problem then to exhaustively determine all potential sources of indefiniteness is unmanageable for the human brain in free-hand execution of this determination – i.e. without automatic guidance by the FSTP-Test, but as must be done by the 'insoluble ambiguity' test.

To conclude these complexity considerations of testing a claimed invention for (in)definiteness of its specification: Nobody before has ever had a chance to understand pre *Mayo* that complexity and fuzziness of the indefiniteness problem that precisely – in particular as to distinguishing embodiments of an interpretation of a claim(ed invention) from this interpretation, as to distinguishing various interpretations of a claim(ed invention) from each other, as to distinguishing the causes of these various interpretations from each other, as to distinguishing the requirements indefiniteness tests meet from each other, as to filtering away the blurring notional problems overlaying it, and in particular as to the enormous and confusing complexities often inevitably associated with these tests when dealing with emerging technology subject matter alias model based claim(ed inventions). In other words: Without the Supreme Court's *KSR/Bilski/Mayo* groundbreaking decisions, in particular *Mayo*, and their/its open discussions by the CAFC, achieving this clarity about 35 USC SPL and its precedents would have been impossible.

This Section is terminated by outlining, what a model underlying the specification of a claim(ed invention) and this claim(ed invention) have to do with each other, again as in the general legal framework seen by Advanced IT since decades, but without the nexus provided by *Mayo* not that speedily and productively connectable to the SPL precedents.

To this end part of [58.ftn11] is recapitulated here – explaining the relation between a function and the algorithms implementing it – and slightly further elaborated on. For simplicity, here just as in [58] it is not considered, how non-functional properties of elements of a claim(ed invention) described on top of a model are supported by the underlying model, although this kind of support takes place pretty similarly to what follows. Since *Mayo* the inventive properties of a claim(ed invention) are described by the inCs making it up (see Section I), and by the just mentioned simplification all the inCs describe functional properties alias functions.

For the pertinent posc just as in Advanced IT a 'function' is immaterial. It exists only intellectually. A function reduces the working of an algorithm implementing it – doing something "stepwise" by executing certain functions that are available to the algorithm to this end – to just the I/O behavior of this algorithm's execution. I.e., and without going into details: A deterministic algorithm defines its function uniquely, while the opposite does not hold, as for any function there is an infinite number of different algorithms defining it, as shown in [58] by the function 'addition of integers'.

Hence, it is untenable to assume – as often done in [50-53] – that a function in a claim is indefinitely specified, ●) if more than one algorithm exists implementing it (as these always exist), or ●) if not all algorithms implementing it are disclosed by the specification (which never is possible as there always is an innumerable number of such algorithms). But this is not, what shall be explained here, as the question to be clarified is, who would provide to an algorithm, which implements a function represented by an inC, the functions this algorithm executes for implementing this inC's execution.

This question embodies already its answer: These functions underlying the inCs, more precisely: underlying the algorithms implementing the inCs, are theoretically/intellectually/notionally provided to the algorithms implementing the inCs by the model in question, i.e. by the model on top of which the specification of the claim(ed invention) is written.

These functions underlying the inCs and their uses in algorithms implementing inCs of such specifications are assumed to be principally known by the posc – called its ordinary skill/creativity [57] – otherwise got to be described by the specification such that the posc can implement the inCs by means of its skill/creativity (colloquially: got to be disclosed by the specification in a manner enabling the posc to this implementation).

Thus, in principle the model underlying any specification of a claim(ed invention), and hence the latter, is the ordinary skill/creativity of the pertinent posc. But when calling a claim(ed invention) from an emerging technology area to be "model based" something additional is assumed about the, for this area pertinent, underlying ordinary skill/creativity alias model. Namely, that it comprises a pertinent consensus about the elements of this ordinary skill/creativity and their 'best use', at least 'orderly use'. While these models for the more recently emerging technologies are informal or group specific and still only

rudimentarily supported by international standards, for the more mature such emerging technologies, such as telecommunications, international standardization of their basic though always very sophisticated "architecture" has led to an extremely helpful common understanding of their key terms/notions, being the pertinent model, considerably accelerating handling innovations in the pertinent area [6,7,59]. In telecommunications technology this international architecture standard released by the International Standards Organization (ISO) and accepted by all international and national telecommunications giants (such as ITU-T/IEEE/... resp. AT&T/DT/FT/BT/NTT/CT/...) is called "The Open Systems Interconnection, ISO-OSI Reference Model), providing the mental/terminological/notional model for all technically qualified telecommunications technology discussions, in particular in R&D and standardization. .

IV. Preventing an Indefiniteness Hype Needs an Appropriate Highest Court's SPL Precedent

This paper has shown, why a refined claim construction substantially increases not only the robustness of a patent granted based on it, but also the efficiency in dealing with it in a practitioner's professional daily life – being the boon of the Supreme Court's *KSR/Bilski/Mayo* "initiative".

This initiative's bane seems to be, at a first glance, that it also opens a new and very ambidextrous battleground for prosecutions of and especially litigations about patents of any kind. I.e.: The Supreme Court's higher developmental level of SPL precedents also provides a guideline for how in particular the notion of indefiniteness of a claim(ed invention) may be easily misunderstood/misused – besides the foreseeable massive increases, due to it, of creativity in designing inventions and of productivity in handling patents (applications). Thus, this newly revitalized awareness of the potentials of the notion "indefiniteness" [61] may be expected to lead to a similar hype as the notion of "inequitable conduct" – prior to the eventual clarification of its legally correct meaning by the CAFC [66].

The final paragraph, of this paper's concluding section, briefly outlines that the US Highest Courts could prevent such an indefiniteness hype by precedents again leveraging on the notion of refined claim construction and pursuing a philosophy similar to that applied in *Therasense* [66]. The actual early indicators of such a hype [61,64] are namely all caused by ignoring the requirements the Supreme Court stated in *Mayo* to be met by a refined claim construction and instead stirring the SPL's indefiniteness problem with its vastly unknown disastrous potentials – prior to this paper. Now these "white holes" on the map of SPL precedents are removed by means of the refined claim construction. I.e.: By now the (in)definiteness problem is clearly understood, just as its hitherto 'insoluble ambiguity' test, and its meanwhile clearly structured and all-embracing FSTP-Test enabling this clarification. But, as the preceding elaborations indicated already, these insights alone are unable to ban this threatening hype – though they can, provided they are supported by such precedents. The reason of this threat, arising in

any SPL test of a claim(ed invention), is that any one of the dozens or hundreds of (in)definiteness tests, in particular for implicit (in)definiteness, leaves open the hairsplitting and potentially all-decisive question: "From when on is the answer to the case and cause specific question asked by such an indefiniteness test (in)definite?" This phenomenon enables and hence invites arguing endlessly and with totally unpredictable and probably in general irreproducible outcome – its negative impact on the consistency and predictability of SPL precedents being evident. Hence, these legal questions (actually of procedural patent law, not of SPL) need being dealt with by the US Highest Courts' appropriate and today not yet existing precedents, as briefly outlined by the last paragraph (following *Therasense* [66]).

Yet, this last but one paragraph first shall briefly indicate, by its below two bullet points, that and how this paper's preceding elaborations – though for many without any natural sciences background looking somewhat academic – do provide an unquestionable as rational/scientific basis to the currently ongoing discussions of the (in)definiteness problem in SPL. They in particular enable to dependably decide, where to place any upcoming statement of this indefiniteness problem's choir, mostly just trying to get instant triviality seen as a reasonable principle of rationality. Indeed, this paper (and [58]) did nothing else but showing that the whole territory of SPL (including classical as well as refined claim construction) is affected by the indefiniteness problem, why it was so difficult to clearly understand its impacts on SPL precedents, and what these impacts are precisely – which is indispensable for assuring that the needed appropriate Highest Courts' precedents would actually prevent any hyping misuse of it.

- Hal Wegner [61] wrote, as to the Supreme Court's first indefiniteness question in *Nautilus vs. Biosig* [58], brief but pinpointed comments on 3 Amicus Briefs by IPO, ABA, and AIPLA stating that they felt the CAFC's "insoluble ambiguous" test is too difficult to swallow – i.o.w.: that they object and urge the Supreme Court to dismiss it. In his words, the
 - "*IPO Bluntly Rejects the CAFC Test*" – because the IPO believes that it is not consistent with the language of 35 USC § 112(b) or this Court's precedent.
 - "*AIPLA Throws the CAFC Test under the Bus*" – because AIPLA believes the shorthand phrases, used by the CAFC for explaining its indefiniteness principles cannot convey their meaning.
 - "*ABA Explains Away 'Insoluble Ambiguous' as 'Shorthand'*" – because ABA believes the notion of "insoluble ambiguous" just summarizes the myriads of ways in which a patent claim can fail to satisfy the definiteness requirement of § 112.

Thus, all three honorable organizations, just as other current US giants, have not recognized the enormous progress by the far reaching scientification, that the Supreme Court's *Mayo* decision brought to the area of SPL business by its interpretation of 35 USC §§ 101/102/103/112, – as leveraged on by this paper and yielding all the preceding insights into the indefiniteness problem, proving that their above commented statements are based on non-/misunderstanding of it.

The author's comment on all these presentations is bifid. On the one side, they correctly complain about the (in)definiteness problem, as understood by the CAFC, being difficult to handle, just as its "insoluble ambiguity" test – the reasons, why this is true, being provided by Sections I-III.

On the other side, they completely miss the point: These difficulties are unavoidable, if .) patents' specifications are supposed to be that precise that :.) their claim(ed invention)s are testable for satisfying 35 USC SPL, both as required by the Supreme Court's *KSR/Bilski/Mayo* decisions. This requires that these claim(ed invention)s are presentable as a refined claim construction based on inventive concepts – the reasons, why this is true, being provided earlier (e.g. [10,18,19,26,42,45,58]). It also implies that then, due to the thus established clarity/rationality of the presentations of the parties involved, this testing of a claim(ed invention) for its satisfying 35 USC SPL, may be greatly facilitated by Advanced IT (e.g. [5,9,15,25,32,46,47,63]). By contrast: Inventing (in)definiteness tests based on guts feelings, e.g. adaptations of the BRI guideline [14]⁹) to (in)definiteness, don't meet these requirements to reestablish consistency/predictability in SPL precedents. They just create more confusion in this for the US society's innovativity decisive and hence economically so important area.

- The CAFC reversed, in *VEDERI vs. GOOGLE* [65], the District Court's claim construction based on the latter's interpretation of the phrase in the claim(ed invention)s:

"... views being substantially elevations of the objects",

which is used in all independent claims' wordings without any further explanation of its meaning in the patent, which has two different semantics [45/ftn5], depending on whether being interpreted as

a) "... (views being substantial elevations) of the objects" or as

b) "... views being (substantially elevations of the objects)",

whereby in a) views are the substantial elevations in one "spherical-like" coordinate systems used by the claim(ed invention), i.e. the objects' "substantial such coordinates"¹⁰) (perfectly matching the prosecution history, as the CAFC correctly noticed, with the "substantial" substituting the precise identification of the spots on/at objects represented by these coordinates – but then made it unnecessary complicated by referring to front/side views implied by the objects' substantial such coordinates), while in b) views may be only elevations of the objects as such (as the District Court potentially correctly noticed – potentially only as this has not been shown to be clearly disclosed for the posc by the specification, under this interpretation comprising many technically totally nebulous terms¹¹)).

⁹ This USPTO guideline is a ricochet in the Highest Courts' SPL precedents [21], as explained e.g. in [37,45].

¹⁰ Any object is identified by just one substantial coordinate, as its other two coordinates are evidently derivable from the known coordinate of the camera and the known horizontal angle, under which it sees the object.

¹¹ Note: The adverbial termination "-ly" is just an English syntax error, as there is no verb in this phrase grammatically necessary for an adverb, in this language. For authenticity, it is preserved. Also: In English language views of objects are front or side or views, but not "substantial elevations of objects". I.e.: What in this interpretation is the substantial elevation of the object "man" or "pavement" or "heaven"?

This case beautifully shows that ●) handling alternative term interpretations as sources of (in)definiteness of the interpretation of a claim(ed invention) is a much cleaner way of dealing with them – in particular as consistent with the CAFC's "insoluble ambiguity" test and the FSTP-Test, and ●) not first identifying a claim(ed invention)'s inventive concepts, as required by *Mayo* – and then, based on them, construing the refined claim construction for it – leaves in the dark, what at all the "inventivity" and/or the "usefulness" is that it allegedly embodies. The consequence is the controversy of this case: The broad wordings of the claims at issue convey nothing of the "inventivity" and/or "usefulness" the claim(ed invention) embodies, what hence their scopes of patent protection are, but they provide the feeling that anything being only similar to it is already comprised by them.

This final paragraph of the paper shows, speaking freehandedly as the author is not a lawyer – after the above outline of the (partial) analogy between the indefiniteness problem and the inequitable conduct problem (finished by the CAFC in *Therasense* [66]) – how this analogy might be leveraged on for designing precedents preventing a hype of the indefiniteness problem right from its outset. *Therasense* has raised by three hurdles the legal bar for a party, being threatened by e.g. a patentee, to claim the latter had committed inequitable conduct in getting the patent granted by the USPTO: The first party must prove as to this allegedly inequitable conduct and about the patent applicant that

- (a) the patent would not have been granted, if the USPTO had known about this conduct, and
- (b) the applicant knew about this relevance of the information about this conduct and
- (c) intentionally withheld this information from the USPTO.

An attempt to construe an analogy to *Therasense*, for preventing an indefiniteness hype, might be in principle: For raising the legal bar for a party, in this situation, to claim that the threatening party's patent is indefinite, this party must prove as to the alleged indefiniteness and the patent owner that

- (a') the patent would not have been granted, if the USPTO had recognized this indefiniteness, and
- (b') the current or initial patent owner knew about this indefiniteness and the current patent owner
- (c') intentionally withheld the information about this indefiniteness from the party threatened by it.

Such precedents would in principle imply that a patent, once granted, could not be revoked by the USPTO – anyway not because of its indefiniteness, even if the USPTO shows by running the FSTP-Test on it that it actually is indefinite and thus definitively removes any enforceable IP right from it, as its owner may convince the CAFC that (b') and/or at least (c') don't hold – unless the latter two conditions also do hold and/or the current patent owner is the initial one, as this situation implies that the patent might indeed be revoked by the USPTO because of inequitable conduct, if this eventually would be confirmed by the CAFC. Details are complicated, not discussed here, and should be clarified by such precedents. I.e.: It seems, such suggested precedents would establish in SPL business conditions similar to usual business ones – in distributing responsibilities between parties involved in a deal.

References

- [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] "Advanced IT" denotes IT research areas such as AI, Semantics, KR, DL, NL, ...
- [3] R. Brachmann, H. Levesque "Knowledge Representation & Reasoning", Elsevier, 2004.
- [4] "The Description Logic Handbook", Cambridge UP, 2010.
- [5] S. Schindler: "Math. Model. Subs. Patent Law (SPL) Top-Down vs. Bottom -Up", Yokohama, JURISIN 2013).
- [6] SSBG pat. appl.: "THE FSTP EXPERT SYSTEM").
- [7] SSBG pat. appl.: "AN INNOVATION EXPERT SYS., IES, & ITS DATA STRUC., PTR-DS").
- [8] J. Schulze: "TECHN. REPORT #1.V1 ON THE '882 PTR AND THE UI OF THE IES PROTOTYPE", in prep.
- [9] S. Schindler: "Patent Business – Before Shake-up", 2013)
- [10] SSBG's Amicus Brief to the CAFC in *LBC*, 2013).
- [11] SSBG pat. appl.: "INV. CONC. ENABL. SEMI-AUTOM. PATENT TESTS").
- [12] C. Correa: "Res. Handbook on Protection of IP under WTO Rules", EE, 2010.
- [13] N. Klunker: "Harmonisierungsbestr. im mater. Patentrecht", MPI Munich, 2010.
- [14] USPTO/MPEP: "2111 Claim Interpretation; Broadest Reason. Interpr. [R-9], "").
- [15] S. Schindler: "KR Support for SPL Precedents", Barcelona, eKNOW-2014).
- [16] J. Daily, S. Kieff: "Anything under the Sun Made by Humans SPL Doctrine as Endogenous Institutions for Commercial Innovation", Stanford and GWU).
- [17] Enbanq Hearing in *LBC*, CAFC, 12.09.2013.
- [18] SSBG Amicus Brief to the Supreme Court in *CLS*, 07.10.2013).
- [19] SSBG Amicus Brief to the Supreme Court in *WildTangent*, 23.09.2013).
- [20] USPTO, "Intellectual Property and the US Economy: *INDUSTR. IN FOCUS*", 2012).
- [21] K. O'Malley: Keynote Address, IPO, 2013).
- [22] S. Schindler, "The View of an Inventor at the Grace Period", Kiev, 2013).
- [23] S. Schindler, "The IES and its In-C Enabled SPL Tests", Munich, 2013).
- [24] S. Schindler, "Two Fundamental Theorems of 'Math. Innovation Science'", Hong Kong, ECM-2013).
- [25] S. Schindler, A. Paschke, S. Ramakrishna, "Form. Legal Reason. that an Invention Satisfies SPL", Bologna, JURIX-2013).
- [26] SSBG' Amicus Brief to the Supreme Court as to *Bilski*, 6.8.2009*).
- [27] T. Bench-Capon, F. Coenen: "Isomorphism. and Legal Knowl. Based Systems", AI&Law, 1992).
- [28] N. Fuchs, R. Schwitter. "Attempt to Controlled English", 1996.
- [29] A. Paschke: "Rules and Logic Program. for the Web". 7. ISS, Galway, 2011.
- [30] K. Ashley, V. Walker, "From Inform. Retrieval to Arg. Retrieval for Legal Cases:", Bologna, JURIX-2013).
- [31] CAFC, Hearing in Oracle vs. Google, "As to Copyrightability of the Java Platform", 6.12.2013.
- [32] S. Schindler, "A KR Based Innovation Expert System (IES) for US SPL Precedents", Phuket, ICIM-2014).
- [33] S. Schindler, "Status Report About the FSTP Prototype", Hyderabad, GIPC-2014.
- [34] S. Schindler, "Status Report About the FSTP Prototype", Moscow, LESI, 2014.
- [35] S. Schindler, "Substantive Trademark Law (STL), Substantive Copyright Law (SCL), and SPL – STL Tests Are True SCL Subtests, and SCL Tests Are True SPL Subtests", in prep.
- [36] S. Schindler, "Boon and Bane of Inventive Concepts and Refined Claim Construction in the Supreme Court's New Patent Precedents", this paper, submitted for publication, 2014).
- [37] D.-M. Bey, C. Cotropia, "The Unreasonableness of the BRI Standard", AIPLA, 2009)
- [38] Transcript of the Hearing in TELES vs. CISCO/USPTO as to the '902 and '453 patents), CAFC, 8.1.2014).
- [39] Transcript of the en banc Hearing in CLS vs. ALICE, CAFC, 8.2.2013).
- [40] SSBG's Brief to the CAFC in case '453').
- [41] SSBG's Brief to the CAFC in case '902').
- [42] SSBG's Amicus Brief to the CAFC in case *CLS*, 06.12.2012).
- [43] SSBG pat. appl. "SEMI-AUTO. GENER. /CUSTOM. OF (ALL) CONF. LEGAL ARG. CHAINS (LACS) IN AN INV.'S SSPL TEST, ENAB. BY ITS In-Cs", 2014).
- [44] R. Rader, Panel Discussion "Patents in Life Sciences", LESI, Berlin, 28.11.2012.
- [45] SSBG's Amicus Brief to the Supreme Court as to its CII Question, Jan. 28, 2014).
- [46] S. Schindler: "Autom. Deriv. of Leg. Arg. Chains (LACs) from Arguable Subtests (ASTs) of a Claimed Invention's Test for Satisf. SPL", submitted for publication).
- [47] S. Schindler: "Automatic Gen. of All ASTs for a Claimed Invention's SPL Test", submitted for publication).
- [48] USPTO/MPEP, "2012 ... Proc. for Subj. Matter Eligibility ... of Process Claims Involv. Laws of Nature", 2012).
- [49] USPTO/MPEP, Guidelines 35 U.S.C. 112(2), Federal Register / Vol. 76, No. 27; MPEP 2171, 9. Aug. 2012).
- [50] NAUTILUS v. BIOSIG, Pfc to the Supreme Court, 2013).
- [51] BIOSIG, Respondent to Pfc, 2013)
- [52] Public Knowledge et al., Amicus Brief to the Supreme Court as to its indefiniteness questions, 2014).
- [53] Amazon et al., Amicus Brief to the Supreme Court as to its indefiniteness questions, 2014).

- [54] White House, FACT SHEET - "... *the President's Call to Strength. Our Patent System and Foster Innovation*", see home page, 01.03.2014*).
- [55] USPTO: see home page, 01.03.2014.
- [56] IPO: "*Patent Claim Limitation Construed According to Claims, Specification, and Prosecution History and Not 'Universally Accepted Meaning'*", see home page, 01.03.2014.
- [57] M. Adelman, R. Rader, J. Thomas: "Cases and Materials on Patent Law", West AP, 2009.
- [58] SSBG's Amicus Brief to the Supreme Court as to its (In)Definiteness Questions, 03.03,2014*).
- [59] SSBG pat. appl. "A PATENT INTERPRETATION(S) AND inCs MINDED UI OF AN IES", 2014.
- [60] S. Schindler: "*A Patent Interpretation(s) and inCs Minded UI of an IES*", in preparation, 2014.
- [61] H. Wegner: "*Indefiniteness, the Sleeping Giant in Patent Law*", www.laipla.net/hal-wegners-top-ten-patent-cases/.
- [62] CAFC: '902 decision in [38], 21.02.2014
- [63] B. Wegner, S. Schindler: "*Mathematical structures enabling the decidability of the patentability and patent eligibility of a claimed invention*", submitted for publication, 2014
- [64] TBD
- [65] CAFC: VEDERI vs. GOOGLE decision; 14.03.2014
- [66] CAFC: THERASENSE vs. BECTON & BAYER decision, 25.05.2011

*) see www.fstp-expert-system.com