Epilog to the Patent-Eligibility Problem (Part I)

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I. Survey about this *Alice* Based Epilog to the Patent-Eligibility Problem[1.a)]

Section I briefly recalls the past of this patent-eligibility problem[1.b)] for a "Claimed Invention, CI":

- In spite of the patent community's high awareness of the socioeconomic threat for the US ET econo-mies[1.a)] implied by this cognitive problem: As to solving it, the patent community had achieved no progress since the Supreme Court recognized the debacles that the CAFC encountered by its SPL precedents about ETCIs as notionally caused – and by its *MBA* framework[1.c)] adjusted the paradigm of the SPL such as to cater to the needs of ETCIs.[1.d)] Instead, voices in this community kept claiming there were no patent-eligibility problem at all, but just a mirage fabricated by the Supreme Court.[1.e)]

- By contrast, familiarity with SPL and its *MBA* framework just as with the evolvement of fundamental cognitions since the old Greeks – especially its many paradigm shifts in Mathematics/Physics/...[1.f)] and their stereotypic phenomenology, today in SPL recreated by the Supreme Court's *MBA* frame-work – immediately induced: The Justices had basically recognized, and by this *MBA* framework communicated,[1.g)] how to refine the SPL paradigm for achieving also as to ETCIs consistent/predic-table/dependable SPL precedents – indispensable for incentivizing long-term/high-risk personal and financial investments into ET R&D, the only non-exhaustible source of the US society's future wealth.

Section II shows: This familiarity enabled two *MBA* framework stimulated basic clarifications: **1.)** For an ETCI just as for the Supreme Court's *Alice* test, their "canonical representations". **2.)** *Alice* test's application on the ETCI, both in canonical representation, determines the ETCI's patent-eligibility beyond any doubt.[1.g)]

Section III finally sketches today's predominant patent decision makers' understanding of the patent-eli-gibility problem: By •)briefly commenting on 3 Petitions for Certiorari by *OIP*, *Ariosa*, *Jericho*, and the impact on this problem by the Supreme Court's *Cuozzo* decision, and •)(re)elaborating on the CAFC decisions in *DDR, Myriad, Enfish*, *IVT,* Bascom and recent academic publications[303-312]. For quickly getting out Sect. II, Sect. III is put into[301], except comments on the USPTO's IEG and the CAFC's *IVT*.

In total: These elaborations are an *epilog* to the patent-eligibility problem – and not a *post scriptum* to the author's comment on it[296] – as this problem ceased to exist: It now is an ordinary ETCI property.

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1 **.a** This PS often doesn't reintroduce notions[271ftn3.a)] clarified by earlier publication, but only identifies one of their earlier introductions – e.g. **CTCIs/ETCI**s ("Classic/Emerging Technologies' Claimed Inventions).[271ftn1.c)] All FSTP publications focus on ETCIs, not always excluding CTCIs. For simplicity, the acronym "**CI**" abbreviates CTCI just as ETCI and denotes a claimed invention independent of the "notional resolution" alias "O-/A-/E-level of abstraction"[271] it is represented. By contrast, the (near) synonyms "invention"/"claim"/ "technical teaching, TT0"/"inventive concept"/… often have some affinity to these 3 levels – then indicated by the resp. prefix.

.b The whole patent-eligibility problem's "Patent-Eligibility Granted & Granting, PEGG" solution[260] is only partially addressed here.

.c   The *KSR/Bilski/Mayo/Myriad/Biosig/Alice* decisions are here referred to by the term[5.c)] "**MBA framework**". In its *Alice* decision, the Supreme Court itself used the name[5.c)] "*(Mayo)* **framework**" although attributing it to several predecessors. Thus, "*KBMMBA* framework" were fairer than the compromise "*MBA*" – but evidently too clumsy.

.d Justice Breyer[69]: "*Different judges can have different interpretations. All you're getting is mine, ok? I think it's easy to say that Archimedes can't just go to a boat builder and say, apply my idea* [being the natural phenomenon of a boats' water displacement]*. All right. Everybody agrees with that. But now we try to take that word "apply" and give content to it. And what I suspect, in my opinion, Mayo did and Bilski and the other cases, is to sketch an outer shell of the content, hoping that the experts, you and the other lawyers and the CAFC, could fill in a little better than we had done the content of that shell. …*"

.e see[276], even claiming a non-identified scientific origin.[2.d)]

.f everybody knows the paradigm shifts for which the names Columbus, Copernicus, Galileo, Einstein stand – though the currently occurring paradigm shift in SPL is not of similar magnitude.

.g The *MBA* framework is expected to become the basis for testing any future invention from any ET area under any SPL, worldwide – also as an ETCI's just as its SPL test may be represented in the extremely simple "**Mathematical Inventive Intelligence**, **MII**" notation, and therefore provide an excellent (scientific) notional basis, and evidently the only one, for everyday business with the filigree of SPL problems as to ETCIs – by classically vague SPL notions[5.c)] no longer dependably controllable due to ETs' intellectual developments.

II.   The *MBA* Framework's View at the Patent-Eligibility Problem – Described by MII

Much of this Section II has been said already in earlier FSTP publications, and is here repeated only in a condensed form.[2.a.1)] Yet their various SPL terms/notions are here better attuned to each other.[2.a.2)]

Using these terms/notions without their attunement to each other by MII (notions & notation) – being an extremely simple and very small (though highly specialized) subset of natural English, embodying some mathematical AIT[2] supporting this scrutiny[2.b)2.c)] needed in dealing exactly/precisely[5.b)] with SPL applied to ETCIs – is very risky, as shown by patent courts' horrible clashes experienced in such dealings.[113]

Quite clearly: One's believing in his/her ability to logically correct thinking in this SPL/ETCI area without MII (or alike) is just wishful thinking,[2.a.3)] as demonstrated by[273p5] – elaborated on by Section II.1.

II.1   A Comment on the USPTO's IEG and Short Remark about the CAFC's *IVT* Decision[2.e)]

First of all, the IEG comments from[296] apply after the CAFC decisions in the *IVT case*[304] a fortiori:

> "... *the USPTO's IEG provides the best guidance possible as to the application of Alice's 'Two-Step' test to an ETCI –* **if one refrains from using therein the notion of inventive concept(s)**", adding "...*find*[ing] *this '*inventive concept(s) abstinence*' by now problematic, after the CAFC's DDR/Enfish/TLI decisions and their MBA framework orientation, especially in light of the USPTO's recent MEMO about them*[292]".

Indeed, any page of[282,292,312] implies a confirmation that this '*inventive concept(s) abstinence*' causes another weak spot in the IEG's reasoning about the handling of an ETCI's patent-eligibility inquiry: By its not clarifying the notion of "inventive concept" – on which the *MBA* framework is explicitly based – it unavoidably puts into legal limbo the patent-eligibility inquiry for many ETCIs, as these then/classically are

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2 **.a.1** Explanatory wordings to these terms/notions are identified by reference numbers with postfixes, e.g. ... [296FIG1] or ... [271page5]
.a.2 Thereby is of extreme importance to avoid any loss of exactness/preciseness[5.b)] in this attunement. This holds in particular for SPL notions hitherto used colloquially only, although often being all deciding – such as "scope(ETCI)" or "preemptivity(ETCI)" (s. Section II.3).
.a.3 what since ever virtually nobody believes, unless being familiar with the intellectual problems in modern foundation of Mathematics.

.b   Scrutiny is needed in using *Alice's patent-eligibility* test[296] – as thereby two subtle but fundamental patent-eligibility issues are unavoidably encountered. The USPTO does not really tackle them in its presentation of its IEG by MEMOs[282,292,312]. In[282] it e.g. correctly states that "... *preemption is not a standalone test for eligibility ... the absence of complete preemption does not demonstrate that a claim is eligible*", and in[292,312] that the IEG is consistent with e.g. the CAFC's decision in *IVT*[304] – but nowhere drops these issues' key terms[5.c)] "*limited preemptive*" and "*significantly more*". Both issues/notions are addressed already in [273ftn3.b)], now repeated in more detail next, and fully leveraged in Section II.3 – with the solution of this problem by the "patent-eligibility criterion" (FIG2).

The *Alice* test requires from a CI[4.a)] – if it comprises a patent-noneligible TT0 – to comprise also an application A of TT0 making[4.a)] the CI "*significantly more*" than the nature of this TT0, being a necessary condition for a CI's patent-eligibility. I.e., any correct interpretation of the Supreme Court's *Alice* test must check whether the CI's specification discloses an application of the nature of TT0 – as *Alice* explicitly requires – "... '*transform*[ing] *the nature of the claim* [alias TT0] *into a patent-eligible application*", and additionally an inventive concept transforming the nature of the CI's TT0 into "... *significantly more than a patent upon the [ineligible concept] itself*" [being TT0].

I.e., a CI does not need to comprise claim/TT0 but only a whatsoever "**nature of the claim/TT0, TT0**[NT, 3.c),FIG1,4.a)] yet under the precondition that there is a resp. "**inventive *Alice* concept, inC**[AliceTT0NT"][273ftn3.b)] of the CI, such that the pair $A^{*TT0NT} ::= <A^{TT0NT}, inC^{AliceTT0NT}>$[4.a)] performs this transformation[3.a)] of a $TT0^{NT}$ into significantly more than what TT0's concepts embody. Thereby namely nobody would assert that a space1 based on a set1 of independent concepts is not "significantly more" than a space2 based on a set2 of concepts, if space2⊂space1 and set2⊂set1 – in particular, if the element(s) of set1\set2≠∅ is(are) inventive concepts of the CI. (This colloquially founded rationale is easily translated into a mathematically founded one by considering the RTSes involved). [142,182]

Note: This "*significantly more*" requirement ●) firstly, does not imply that an E-crC^A*'s truth set must be defined on a notional space (= mathematical set) – enabling precisely modeling (= mathematically defining) some set of notions – of another ontology than that one comprising the notional space suitable for precisely modeling an E-crC^TT0NT, though this often occurs, e.g. in *DDR, Myriad, Enfish, IVT*, ●)secondly, is often met even if only e.g. the resp. truth sets are disjoined, and ●)thirdly, does not suffice for CI's patent-eligibility, if CI is still of "**complete = unlimited preemptivity**". Section II.3 resp. Section III will show that these CAFC decisions meet the above "**limited preemptivity**" requirement, too – though not noticed by the CAFC or the IEG.

.c   Not acknowledging these two fundamental – though subtle – issues would **significantly** under-interpret the Supreme Court's 6 unanimous decisions involved[1.c)] as completely ignoring *Alice*'s Solomonic philosophy[271ftn2.a)] based on them in resolving today's "patent-eligibility dilemma" with ETCIs: It threatens to put the whole US patent system in jeopardy (as the Supreme Court in *Mayo* explained).

The reason for all this reluctance to proceed as the *MBA* framework requires – and now also the CAFC by its just quoted decisions – seems to be that without the notion of inventive concepts of ETCIs it is definitively impossible to define precisely/exactly[5.c)] these just discussed two crucial notions "significantly more" and "preemptivity"(not even the for litigations so important notion "scope(ETCI)"[5.d)]).

.d   Not familiar with AIT and unaware of its potentials as to testing ETCIs under SPL, two kinds of keen academic publications[302] consider this whole *MBA* framework discussion either as obsolete[305] (as jumping on fancy ideas instead of crucially analyzing court clashes, as the ones mentioned above) or as not yet having noticed the *MBA* framework's deep impact on ETs as such,[1.g)] especially on Software Technology[275,276] and the various Life Cycle Technologies. The contrary to both assumptions is true, as shown in detail in[302].

.e   Most of the here due remark about the enormous step forward, achieved by the CAFC in its *IVT* decision, for approaching the *MBA* framework – therein drawing a clear "*MBA* **framework trace**" – must go into[3.d),4.c)] (due to time/space limitations).[301] **– continued in**[3.d)] –

described by non-rationalizable "limitations" of their inventions' specifications, i.e. remain notionally in highly speculative metaphysics. In the wake of this "rationality waiving" it is only consequential to also ignore that the Supreme Court clearly stated that ETCIs of <u>totally</u> unlimited preemptivity – <u>and only these</u>! – must be exempted from patent-eligibility.[2.b)] Examples of the IEG's such weak – as *MBA* framework incoherent[2.b)] – points, when proceeding according to the IEG only, are given in[301]. Yet all of them may be eliminated refining this inquiry to be based on the ETCI's inventive concepts (see Section II.3/4).

To summarize: The just said indicates the need to reconsider the IEG interpretation of this *Alice* test – i.e. the IEG's two-step test – for refining it according to the recent CAFC precedents about ETCIs.[5.f)] Currently this IEG interpretation partially ignores these 6 unanimous decisions' requirements, as shown by[2.b)], i.e. ignores the bright separation line between patent-eligible and -noneligible CIs (see Section II.3). This incompleteness of the IEG's two-step test[5.f)] preserves the currently unavoidable total uncertainty as to the patent-eligibility of ETCIs – which to terminate is one of the key objectives of the Supreme Court's 6 decisions[1.c)]. While the pertinent most recent CAFC decision, *IVT*, gets much closer to the Supreme Court's *MBA* framework trace than the CAFC's *DDR* decision (initializing this approach), the IEG vastly implements *DDR* and hitherto addressed none of the features of this trace in *IVT*.[2.d)]

And: It is true that IEG's ignoring the notional filigree inherent to the notion of a CI's patent-eligibility requires less scrutiny in CIs' eligibility tests – just as IEG's BRI[PTO] does, compared to a CI's BRI*MBA*. [258] But proceeding this way is not only legally clearly erroneous. Its logically inevitable consequence is that it also makes SPL precedents about ETCIs unpredictable and inconsistent – and hence incredible.

II.2   The MII Description of the *MBA* Framework Based FSTP Test

FIG1/L1 recapitulate/refine[3.a)] the canonical FSTP Test of an ETCI[4.a)] in canonical form alias COM(CI).[3.b)]

1) (a)	generate/input:	COM(CI) ::= CI ::=	values of $I,N,K^1,\ldots,K^N$ – with (optional) user-names $\forall$ generated/input items and $\forall\epsilon$ of A-crCS ::= {A-crC0n | 1≤n≤N} $\cup$ E-crCS ::= {E-crC0nk| 1≤n≤N $\wedge$ 1≤k≤K^n};	
(b)	justof[$\forall$1≤n≤N]:	**A-/E-level-test**	**is passed:** iff A-crC0n mod({$\forall\epsilon$E-ncrC0n}) = $\wedge^{1≤k≤Kn}$E-crC0nk;	
(c)	justof:	**A*-test**	**is passed:** iff E-crCS$^{TT0\wedge wleC}$ is useful $\wedge$ E-crCS$^{CI\wedge wleC}$ is new$\wedge$useful;	
(d)	justof:	*Biosig-test*	**is passed:** iff E-crCS$^{TT0\wedge wleC}$ $\wedge$ E-crCS$^{CI\wedge wleC}$ are complete $\wedge$ definite;	
2)	justof[$\forall$1≤n≤N$\wedge$1≤k≤Kn]:	**CI Disclosure-test**	**is passed:** iff E-crC0nk is lawfully disclosed by E-leC0nk, with E-leC0nkϵ|SPL|;	
3)	justof[$\forall$1≤n≤N$\wedge$1≤k≤Kn]:	**CI Enabling-test**	**is passed:** iff A-crC0n's implementability : it embodies $\forall$ E-crC0nk is disclosed;	
4)	justof:	*Bilski-test*	**is passed:** iff E-crCS^{TT0npe} $\neq^+\varnothing$;	
5)	justof:	*Mayo-lMyriad-test*	**is passed:** iff E-crCS$^{Alice}\neq\varnothing$;	
6)	justof:	*Alice-test*	**is passed:** iff CI is limited preemptive;	
7)	justof[$\forall$1≤n≤N$\wedge$1≤k≤Kn]:	**Independence-test**	**is passed:** iff $\forall\epsilon$ {E-crC0nk | 1≤n≤N $\wedge$ 1≤k≤K^n} are independent of each other;	
8)	justof[$\forall$1,1,1 ≤ i,n,k≤I,N,KN]:	*KSR(RS)-test*	**is passed:** iff $\forall\Delta^{i,n,k}$ ::= if (E-crCink $=^{mod(\delta(CI))}$ E-crC0nk) "A"else"N";	
9)	justof[$\forall$1,1,1 ≤ i,n,k≤I,N,KN]:	*Graham(RS)-test*	**is passed:** iff { $\forall\prod^{1≤n≤N}$ (<$\Delta^{i,n,1}$ ="A", ..., $\Delta^{i,n,Kn}$ ="A"> $\wedge$ iϵ[1,I]) } = $\varnothing$.	

FIG1:   *The FSTP-Test[3.c)] – Checking an ETCI in Canonical Form for Meeting all 9 Concerns Codified by 35 USC SPL*

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3 **.a**   This FSTP-Test representation is more precise/exact[5.b)] and complete than its earlier publications – see Section II.4, especially[5.f)]. Its MII description will slightly be adjusted, once more, when the syntax and semantics/pragmatics of MII eventually is determined[182].

.b   A notion here may have more than 1 name for so indicating, by its extension its internals, or by its change its intended use.

.c   The integration of TT0 into=with the application A of CI defines the A specific nature of TT0, NT[2.b)], integrated into=with CI.[L1/8.,4.a)] I.e.: For brevity, FIG1 shows TT0 instead of NT – though NT is meant, with RTS(E-crCS^{NT}) $\subseteq$ RTS(E-crCS^{TT0}).[L1/8]

.d   – **continued from**[2.e)] –   The evidently in *IVT* still missing feature of the *MBA* framework is *IVT*'s not being "inventive concepts based" (as the Supreme Court by its *Mayo* and *Alice* decisions explicitly requires!), but being "inventive limitations burdened", i.e. not starting a CI's analysis with searching for its disclosed inC(s) describing it, but with often not at all precisely/exactly definable limitations of terms' meanings.[5.b)] This analysis often is thus taken to somewhere in the extremely speculative Metaphysics of applying classical SPL pragmatics to ETCIs.

This is insofar conclusive, as without the O-/A-/E-level disaggregation of the compound O-inCs into A- and eventually E-inCs – as explained in[271], once more, and hardly applicable to limitations – their massive advantages over these notionally inherently vague limitations mostly cannot be recognized.[2.c)] This refinement of analyzing ETCIs – i.e. this widening the intellectual horizon in analyzing ETCIs' complexity by several dimensions and hence dramatically improving the intellectual capability of recognizing the internal structures and external impacts of inventive concepts – is today a matter of course for any qualified IT system designer. Though, usually he/she would not have become aware of his/her amazing such cognitive potentials, as he/she is not used to reflect about – **continued in**[4.c)] –

Legend1: The horizontal dashed line identifies, for a CI, its refined claim interpretation (above this line), initially delivered by the CI's inventor, hence by *Biosig* deserving deference (except based on a clear legal error) – while its refined claim construction comprises all 9 FSTP-testo's. I.e.: The meaning of FSTP-test1 differs, depending on whether it is involved, for a CI, in determining/defining its refined claim interpretation or in veri-/falsifying its refined claim construction.[296ftn6.a)]

The next 9 paragraphs provide further comments on the FSTP Test of a CI for SPL satisfaction, assuming familiarity with the notion of "inCs"[259] – the indispensability of which for the *MBA* framework is emphasized in Section II.1.

While these 9 paragraphs are of only explanatory content, they should be read with much good-will, as they were written for a much earlier version and since then not having been updated or even proofread, due to running out of time. The likely bugs will be fixed in[301] or on short notice, if urgently needed by someone. They are here included as nevertheless probably being of some help. The author regrets if this is a (potential) deficiency.

1. **Up-front:** [4.a)] **α)** The redistribution of the total semantics of all the 6 Supreme Court decisions[1.c)] – without changing their total semantics – onto the 9 testo's is not unique. This redistribution has been enabled by the refinement of the O-/A-level description of a CI to its E-level description, by logical reasons absolutely indispensable, as for many CIs without the E-crCs several of the original/classical tests are not rationalizable on the A-level of notional resolution – e.g. the original *Graham* test[5-7], the classic disclosure test, ... As this refinement is unique (mod isomorphisms),[5-7,271] the redistribution represented by the FSTP Test seems optimal, due to the simplicity of all now 9 testo's achieved by this redistribution. Hence the existence of a (substantively) more intuitive distribution is unlikely. Especially, as by[χ)] holds: The semantics of any of the 6 FSTP-test1),4)-6),8),9) comprises that of its **peer *MBA* decision**. **β)** All 9 testo's are executed on the same set of cr/inCs of the CI (not warranted by classical claim interpretation/construction). **χ)** In any testo°, $2 \leq o° \leq 9$, the expression right of its "iff" is evaluated by leveraging that all expressiono°'s for $o°'< o°$ have evaluated to T. Moreover, for a CI, by evident Second Order Logic reasons the "passed" result of any testo on a CI is meaningful only if the CI has passed the other 8 testo's, too. This is in particular evidenced by FSTP-test6: It neither repeats the preceding FSTP-testo, $1 \leq o \leq 5$, nor mentions the following testo, $7 \leq o \leq 9$ (This is very often ignored with classical claim interpretation/construction, potentially rendering an isolated or only FOL result meaningless). **δ)** In identifiers the "0" for doc0 may be omitted – and the series of indices nk, $1 \leq n \leq N$, $1 \leq k \leq K_n$, may be replaced by $1 \leq k \leq K$, $K ::= \sum_{1 \leq n \leq N} K_n$. **ε)** Any "right of the iff" statement in mathematical representation must today be confirmed as correct by the pposc based on the CI's specification, in test1 the pposc is replaced by the inventor.[258] **φ)** During construing the CI's claim construction, RS={doc0} is logically mandatory, i.e. only the base of RS (and the CI's later anticipation/obviousness/infringement testing is not considered) here. **γ)** A postfix "wleC","npe","TT0","ls⊥rs" of an item[5.c)] means that it holds "without its leCs", "only for non-patent-eligible crCs", "only on TT0", resp. as "the properties of $\forall \in$ **l**eft **s**et are independent of those of the **r**ight **s**et[2.b)]".

2. **Line1(a)** is – while determining the CI's claim interpretation – no test (except for some input consistencies), but only provides the input for the following determination of the CI's claim construction (see the beginning of Legend1).

3. **test1(b)** represents the CI's O-/A-/E-consistency test, being self-explanatory by its description right of the "iff".

4. **test1(c)** excludes by its usefulness requirement unethical CIs from patent-eligibility – its rest is evident.

5. In **test1(d)** the notion of "definiteness∧completeness" of COM(CI) is synonymous to the notion "definiteness" of the Supreme Court's *Biosig* decision, in particular as clarified by the beginning of Legend1 and excluding the BRI[PTO].[258]

6. **test2** is the only testo, $1 \leq o \leq 9$, that cares about the E-leCs of the CI at issue (Once the E-leCs are determined, its A-leCs may be derived from them, while from these deriving its O-leCs is often meaningless as getting too complex). Thereby |SPL| stands for the finite set of all non-redundant Legal Argument Chains, LACs, construable from 35 USC SPL.

7. In **test3** only the A-crCn, not their E-crC0nk's, $1 \leq n \leq N \wedge 1 \leq nk \leq K^n$, need to be enablingly disclosed, yet such that A-crCn must be testable for embodying its E-crC0nk's.[299]

8. **test4** & **test5** & **test6** are vastly explained in several footnotes and Section II.3.

9. **test7** & **test8** & **test9:** As here only the patent-eligibility test for COM(CI) is of interest, test7 may be completely skipped, and in test8 of the Reference Set of TT0 only doc0 is considered – whereby RS::= {doc0, doc1,...,docI}, and doci denotes the prior art for the patent (application), $1 \leq i \leq I$, and doc0 is this patent (application) and provides the reference K-tuple for all of them. test9 is by the *Alice*-test required as part of its definition of patent-eligibility, but after the simplification of test8, test 9 is trivially passed by the CI, as the set right of the iff is empty.

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[4] **.a** By *Alice* an "**ETCI**" – in the IEG called "patent-eligible subject matter" – is defined to be

    "**CI ::= a pair <CI's invention = a patent-noneligible TT0, CI's A* ::= a pair <an A^NT, an E^NT-crCS^*Alice*>>**", whereby

  ● A^NT ::= an application A of a "**nature of TT0, NT**",[2.b)] with RTS(E-crCS^NT) $\subseteq$ RTS(E-crCS^TT0), for "RTS" see[5.d)], and without NT:

  ● E-crCS^*Alice* ::= (E-crCS^CI\E-crCS^TT0)^⊥E-crCSTT0 L1/1.φ) is *Alice*'s inventive concept of the CI, with E-crCS^*Alice* may be ≠∅ or =∅ [244], and

  ● TT0, E-crCS^CI, E-crCS^NT, E-crCS^TT0, A=A^NT, and E-crCS^*Alice* are disclosed (for the pposc) by the CI's specification.

  Note: The IEG cannot define a precise/exact notion of "patent-eligible subject matter" due to its "inC abstinence"[Sec.II.1].

.b The here topical CIs in canonical form are discussed/shown in[296] and in Section III.[301]

.c – **continued from** [3.d)] – what perception by what means we have of the world, as Kant et al.[see ref.list] tried to study scientifically under non-academic premises (by other philosophers often unintentionally and/or unnoticed cultivated). Thus, even when refraining from unquestionably defining E-inCs, as invited by[1.d)] – and vastly understood today already, as short-term partially reported in[301] – the CAFC has to make another big step for getting fully into the *MBA* framework trace. Though, its new impetus tells that the CAFC will get it done. Indeed, under this impetus, this is no longer a CAFC problem, but much more a USPTO problem with its many thousands examiners.

II.3   The Stereotypic Derivation of an ETCI's Patent-Eligibility

This Section asserts that the below MII representation of the patent-eligibility criterion correctly states: For a well-defined CI – its well-definedness being acknowledged by the FSTP-testo, $1 \leq o \leq 5$ – its patent-eligibility is equivalent to its limited preemptivity. This is shown after exact/precise definitions are provided of the three "preemptivity" notions[5.c)] hitherto not existing.[5.a)]

Let a CI be defined – procedurally, because all below E-crCS are derivable from the CI's specification – as:

- "**nonpreemptive**" iff the CI's specification determines that the CI's E-crCS^{npe} $=^+ \varnothing$; [5.d)]
- "**limited preemptive**" iff the CI's specification determines that E-crCS$^{npe} \neq^+ \varnothing \wedge$ E-crCS$^{Alice} \neq \varnothing$. [4.a)];
- "**unlimited preemptive**" iff the CI's specification determines that E-crCS$^{npe} \neq^+ \varnothing \wedge$ E-crCS$^{Alice} = \varnothing$.

"For a CI passing FSTP-testo, $1 \leq o \leq 5$, holds: It is ●patent-eligible iff it is ●limited preemptive"

FIG3:   *The "Patent-Eligibility Criterion" for a CI by Alice, Based on inC^{Alice} Defined via the CI's being "significantly more"*

The criterion holds, as it may be restated as saying: This criterion's precondition[L1/1.χ)] + 1 side of the iff statement yields the correctness of its other side[L1/9.]   **q.e.d.**[5.a)]

If one based in[4.a)] the inC^{Alice} alias E-crCS^{Alice} on CI's limited preemptivity instead of its significantly more, this criterion would read as shown by FIG4.

"For a CI passing FSTP-testo, $1 \leq o \leq 5$, holds: It is ●patent-eligible iff it is ●significantly more "

FIG4:   *The "Patent-Eligibility Criterion" for a CI by Alice, Based on inC^{Alice} Defined via the CI's being "limited preemptive"*

This criterion stops guessing a CI's patent-eligibility – and instead simply checks whether CI passes it.
Its thus resulting patent-eligibility finding is beyond doubt.
It is the hitherto missing[5.f)] bright "line of separation".

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5 **.a**   This criterion's correctness follows straightforwardly from the exact/precise[5.b)] definitions of these 3 preemptivity notions and of the FSTP Test, as shown by the colloquial proof after FIG2. The then evident corresponding mathematical proof will be provided in[142,182].

.b **Exact**" shall emphasize that these notions must concisely represent and completely&seamlessly enable dealing with the notions of the *MBA* framework (including their preemptivity aspects discussed here but in CIs' specifications usually completely ignored), "**precise**" that they must be straightforwardly reducible to their (fully axiomized) MII expressions[296,299]. Prior to this by the *MBA* framework implied semiotics[5.c)] of SPL[271ftn3.a)] in favor of ETCIs,[192] this exact-/preciseness was just unthinkable.

   If one argued that none of these Supreme Court decisions explicitly requires the degree of exact-/preciseness required here, this would mean forgetting about the *MBA* framework's striving for consistency and predictability in SPL precedents also about ETCIs, including their social requirements that the Supreme Court clearly stated in *Mayo* to be met by its accordingly refined interpretation of 35 USC SPL. Hence, any "materialistic only" SPL satisfiability test – e.g. not excluding ETCIs' unlimited preemptivity from patentability – thus ignoring Kant's Categorical Imperative[e.g. 9.b,197,202,208,237,299] is deficient, a priori.

.c   A 'term' is an arbitrary 'identifier' alias 'name'/'acronym'/'reference'/.... A pair <'term'/..., its 'meaning'> is called 'notion', denoted by its name. The term '**item**' may be used as an unspecific alias for any of the just highlighted items.

   A notion's meaning, assigned to its term/name/requirement/..., is called the latter's '**semantics**' – semantics refined for an application's need, the former's '**pragmatics**'. Making/Creating new meanings/semantics/pragmatics is called '**semiotics**'. Thus, the *MBA* framework performs 'SPL semiotics' by refining the classical SPL pragmatics – as SPL needs for dependably protecting ETCIs.

.d   The 3 above preemptivity notions may alternatively/redundantly be defined by using the notion of "**scope(CI)**" as follows:
   - The "**scope^t(CI)**" ::= "**Realization Tuple Set of a CI, RTS^t(CI)**"   **IS**   the set $\forall K^t$-tuples ϵ TS^t(CI)$\cap$D^{is}(CI);
   - The "**TS^t(CI)**"   ::= "**Truth Set of CI at $t \geq 0$**"   **IS** $\{\prod^{1 \leq k \leq Kt}$TS^t(E-crC0k)$\}$, with (K^t::=$\sum^{1 \leq n \leq N}K^{n, t}$) $\wedge$ (TS^t(E-crC0k)$\subseteq$ D(E-crC0k));
   - The "**D^{is}(CI)**"   ::= "**Disclosure Tuple Set of CI**"   **IS** $\{\prod^{1 \leq k \leq K}$D(E-crC0k)$\}$;

whereby "IS" is in MII synonym to "::=", $t \in [0,\infty)$ is the time parameter, D(E-crC0k) is the domain(E-crC0k). Then
   - "**nonpreemptive**" iff scope$^{\forall t>0}$(CI)\ scope$^{t=0}$(CI) $=^+ \varnothing$, i.e. all tuples of scope(CI) are constants over time.
   - "**limited preemptive**" iff (scope$^{\forall t>0}$(CI)\ scope$^{t=0}$(CI) $\neq^+ \varnothing$) $\wedge$ inC$^{Alice} \neq \varnothing$.
   - "**unlimited preemptive**" iff (scope$^{\forall t>0}$(CI)\ scope$^{t=0}$(CI) $\neq^+ \varnothing$) $\wedge$ inC$^{Alice} = \varnothing$.

whereby for scope^t(CI) potentially grows over time t due to growing knowledge.[L1/1.δ)] I.e., any such CI is "**preemptive**".[5.e)]
But the IEG also cannot define a precise/exact notion of "scope(ETCI)" – and does not try it – due to its "inC abstinence"[Sec.II.1]

.e   – holding for any ETCI, as each of them ●)either itself represents an abstract idea, although canonically describable by eligibility-nonexempted crCs (e.g. *Bilski/Alice/...*) ●)or comprises at least one crC representing a natural phenomenon or an abstract idea (e.g. *KSR/Mayo/Myriad/Biosig/...*) – modeled by the "$=^+$" – hence is necessarily "model based", i.e. part of MII.

.f   Achieving this far reaching result is due to researching the *Alice* decision for a complete *Alice* test – not only its evident part,[2.c)] as the IEG courageously did against initially furious and still sometimes vivid resistance – as the author felt uneasy in believing that the Supreme Court, after its excellent 5 leading of the 6 decisions,[1.c)] had unanimously agreed on a somehow too vague *Mayo* interpretation.

II.4   Advantages of this *Alice* Based Solution/Inquiry of/about a CI's Patent-Eligibility

The enormous advantage of this criterion is that it saves eclectically searching for each CI by different considerations for its inventive concept crC[Alice] and its being patent-eligible or not – without eventually knowing for sure, whether it is patent-eligible or not. By contrast: FIG2 and its Legend2 indicate that this procedural criterion/ solution is really stereotypic. Moreover it is beyond doubt as being just a (meticulous) notional refinement of the Supreme Court's complete[5.f)] *Alice* test.

Another advantage of this criterion is that the invocation of a CI's patent-eligibility inquiry by this criterion does not require the inquirer's intimate familiarity with the subtleties and pitfalls of the MBA framework notions: He/She may blindly use and trust them. The tests that the criterion imposes on a CI namely un-avoidably generate that much tightly complementary – i.e. redundant – knowledge about the CI that it is extremely unlikely to go in an unnoticed though erroneous way, even in the case the inquirer is not familiar at all with such adversities. Thereby this effect is amplified by two additional features of any ETCI's eligibility test: ●) It is made up of notions absolutely uniformly intermeshed with each other, having the clear structure of the post-Mayo SPL's refined claim interpretation and construction, see FIG1.   ●)It distinguishes between patent-eligible and -noneligible CIs in an for all ETs absolutely uniform way. Both uniformities greatly improve the rapid distribution of this knowledge.
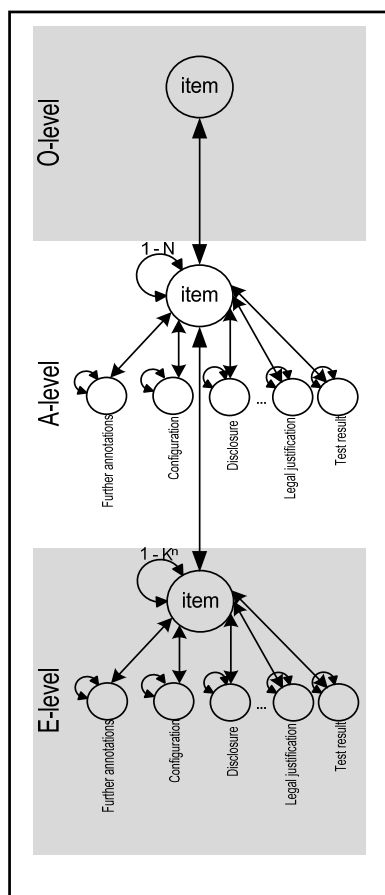

Finally, the current sweeping uncertainty about the exact/precise[5.b)] meaning of the *Alice* test, plaguing the patent community now for several years, was due to the lack of scrutiny[2.b)] in reading its notionally, indeed filigree, 6 Supreme Court decisions,[1.c)] outlined in Section II.1 and in[2.b)]. Yet this hitherto for CTCIs often unnecessary high degree of filigree of thoughts involved in "advanced SPL know-how" – unquestionably required by the *MBA* framework – is indispensable for generating/preserving/enforcing/... IP in any more and more immaterial/intangible/invisible/fictional ET area and its innovations.[1.g)] Otherwise, if getting stuck with "classical SPL know-how" notions in an ET area, it is not only ●)impossible to reduce the already lost consistency and predictability of ETCIs' SPL precedents, but ●)any step of progress in ET economy (e.g. in a Software/Nano/ Life-cycle area) would worsen its existing such SPL precedents' inconsistency/unpredictability/protection-by-SPL-incapability.

In total, this criterion's contribution to stabilizing the national patent system by avoiding its eventual failure – in the face of its probably soon, if not already – predominant ETCIs cannot be overestimated.

FIG2:   *The Generic Element of the Data Structure, "DS", of a CI's FSTP Test resp. of its Patent-Eligibility Criterion*

Legend2:   Any DS(CI) has the structure derived from the Generic Element – as implemented in the IES prototype.[261,298] A loop at a node indicates that this node may be copied, together with its single incoming and one or more outgoing arrows, each pointing to a node (if the outgoing arrow exists in the GE). This copy then is connected to its predecessor node by this copy's incoming arrow. All descriptions being taken or derivable from FIG1.

The FSTP-Project's Reference List

FSTP = F̲acts S̲creening/T̲ransforming/P̲resenting (Version of 20.07.2016'')

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