An ETCI's AI-test is its Ideal PE-Test — Being ≙ FSTP-Test. [1.a)]

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This PE-/AI-mail does not elaborate on the ●old evergreen catch word '**AI**', nor on the ●many years of broad dismay caused by courts' '**[n]PE**' decisions about ETCIs: Both notions' negative connotations[b)] will namely rapidly disappear anyway, due to the huge practical advantages coming with ETCIs' AI[FFOL] and exciting inventors of & investors into them.

The USPTO's 2019 OPEG[566] is in any ETCI business extremely important as communicating the meaning of PE, being the crucial key to creating/attacking/defending/enforcing/licensing/monetizing/R&D-financing/… patents on ETCIs. The Supreme Court in its 6 unanimous framework decisions *KSR/Bilski/Mayo/Myriad/Biosig/Alice* focused on the new patenting needs of ETCIs and their PE. It had recognized already then that ●such highly innovative potentials as embodied by ETCIs never before existed, ●the future wealth of the US society is alternativelessly depending on them, but also that ●patenting many wildly preemptive[577] ETCIs may put the entire US NPS into jeopardy, as they may threaten the socioeconomic agreement about 35 USC/SPL

Yet the **then** USPTO, its patent community, & CAFC's majority did not notice that ETCIs therefore must not only be analysed for PE like CTCIs are. But the Supreme Court's first 5 framework decisions implicitly — *Alice* explicitly — require that an ETCI must, for being PE, be analysed whether ●it has an '*application*' of '*its directed to exceptional concept*' that jointly are '*significantly more*' than what is the latter, under the boundary condition that ●its E-crCS is **α)** so filigree that it warrants **β)** minimal §101 invasivity[573] & **γ)** no wild preemptivity (i.e. potential application clustering'[577]). While the USPTO's 2019 OPEG meets the first ●'s requirements rationally[c)], it still ignores the second ●'s ones, i.e. the 3 basically independent Supreme Court requirements **α)-γ)**.

Thus, while the USPTO's 2019 OPEG rationally already eliminates the first set of disincentives into cutting edge R&D investments, it currently not yet rationally eliminates the second disincentives set — that the Supreme Court also had recognized by *Alice*'s PE specification (see the CRISPR patenting landslide[584, 585]). I.e., failing 1 of **α)-γ)** would cause very many such ETCI patents ending in court cases. This means that this way of granting ETCI patents contradicts what the US Constitution and the Supreme Court by its framework implementation require.

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1.**a** ●All Supreme Court framework implied notions necessarily used but not defined in this PE-/AI-mail are defined in[573,577] or several scattered earlier FSTP mails, then referred to by '[FSTP]'. ●Since[577], the abbreviations "**CBN**" stands in FSTPtech for the notion "**combination**" introduced by the Supreme Court's *Alice* decision. ●Several acronyms stand for the same meaning (although sometimes being context-sensitive), e.g. CBN & E-crCS, or TT0 & E-crCS[TT0], or ETCI\TT0 & E-crCS[ETCI\TT0]……, or CRS & SPL & FOL & FFOL, or AI & AI[SPL] & AI[CRS] or AI[FOL].

Replacing the headline's AI ::=AI[SPL] by "**AI[FFOL] ::={<AI[SPL]∧AI[FFOL]>}**", yields its generalization: 'ETCI[FFOL]'s AI[FFOL]-test is its ideal PE[FFOL]-Test ≙ FSTP[FFOL]-Test'.

FSTPtech deals only with mathematically axiomized/-able & deterministic AIs — enabling their usability in mathematical proving.

If passing the FSTP-Test, an ETCI is in FSTPtech called to be of "**ideal**"[573] as it has enabled rationally & mathematically simply proving[FSTP,182] ETCI's being scientific & secure & (semi-)automatable & FFOL requirements satisfying (or not[573]) — scientifically called to be in "**canonical**" KR. An ETCI is called [ideal]PE iff it has all these properties.

If an ETCI is not given in & not unquestionably correctly transformable into its canonical KR, then it is called to be of "**wild**" preemptivity — as then there is no way to rationally proving especially its being not 'application clustering'[577] — as with today patenting ETCIs often is the case[488,495].

The patenting community calls an ETCI as of "**rough**" SPL specification also if it is much vaguer, e.g. it ignores its application clustering[573,577].

.b — the notion of AI has since the 70[th] been popular but often just phony, and the PE notion of the Supreme Court's framework decisions has then been (by USPTO & CAFC) so incomprehensibly misinterpreted[480] that it never became popular —

.c This is not quite correct, as the second part of test5' need not be met by the ETCI under PE-test (and hitherto this deficiency is not yet broadly noticed).

ANNEX: The AI-Test is ≙ to & Derived from the FSTP-Test of an ETCI in CBN([mrat/rat/mat]ETCI)-KR[1.a].

Metarational Claim Interpretation, [mrat]CI: <2 inputs::= [mrat&rat]CI in [(nISL∨ISL) & ISL]KRs, 2 outputs ::= CBN([mrat&rat]ETCI)> & **begin:**

1) if [CBN([mrat&rat]ETCI) is factually {[mrat&rat]O-crC0n = [mrat&rat]((Σ^1≤n≤N K_n=K) ∧ (∧^1≤n≤K_n E-crC0k_n)∧ncrC0n)) / 1≤n≤N} ∧ [mrat&rat](E-complete∧-correct∧-definite)] then go on;

2) if [[mrat&rat]O-inC0n, ∀1≤n≤N are ex- or implicitly lawfully_disclosed] then go on;

3) if [[mrat&rat]O-crC0n, ∀1≤n≤N are ex- or implicitly enablingly_disclosed] then output [mrat&rat]E-crCS = CBN([mrat&rat]ETCI) & **stop**.

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(Meta)Rational Claim Construction, [mrat&rat]CC: <[internal]input ::= CBN([mrat&rat]ETCI), [in- & external]output ::= CBN([rat]ETCI)> & **begin:**

4) if [CBN([mrat]ETCI) is [mrat]'*directed to an exceptional concept*', i.e. [rat]'comprises in ETCI's [nPE]TT0 an E-xcrC directing to its meaning] then go on;

5) if [CBN([mrat]ETCI) is [mrat]'*an application of those concepts, …*' i.e. a [rat']ratapplication that uses [nPE]TT0'] then go on;

6) if [CBN([mrat]ETCI) is [mrat]'*significantly more than …*', i..e. [rat']E-crCS^[ETCI\TT0] is basically independent of E-crCS^[TT0]] then go on;

7) if [CBN([mrat]ETCI) is [mrat]'*transforming the nature of the claim….*', i.e. [rat]'transforming claim([nPE]TT0) into claim([PE]ETCI)'] then [i & e]output 'CBN([rat]ETCI) is PE' & **stop**.

Mathematical Claim Construction, [mat]CC: <[internal]input ::= CBN([rat]ETCI), [external]output ::= CBN([mat]ETCI)> & **begin:**

4') if [E-xcrCS^[TT0] ≠⁺ Φ] then go on;

5') if [(∏^[TT0] scope(E-crCS^[ETCI]) ⊆ scope(E-crCS^[TT0])) ∧ (((∃ E-crC° ∈ E-crCS^[ETCI\TT0]) ∧ (∃ E-crC°° ∈ E-crCS^[TT0])) : E-crC° ‖ E-crC°°)] then go on;

6') if [(∃ E-crC* ∈ E-crCS^[ETCI\TT0]) ∧ (E-crC* ⋧ E-crCS^[TT0])] then go on;

7') if [E-crCS^[ETCI\{E-crC*}] = PM] then output 'CBN([mat]ETCI) is PE' & **stop**.

Mathematical Claim Construction, [mat^AI]CC: <[internal]input ::= CBN([rat]ETCI), [external]output ::= CBN([mat]ETCI)> & **begin:**

4'') if [E-xcrCS^[TT0] ≠⁺ Φ =:: [rat]'comprises in the [nPE]TT0 an E-xcrC'] then go on;

5'') if [(∏^[TT0] scope(E-crCS^[ETCI]) ⊆ scope(E-crCS^[TT0])) ∧ (((∃ E-crC° ∈ E-crCS^[ETCI\TT0]) ∧ (∃ E-crC°° ∈ E-crCS^[TT0])) : E-crC° ‖ E-crC°°) =:: =:: a [rat']ratapplication that uses [nPE]TT0'] then go on;

6'') if [(∃ E-crC* ∈ E-crCS^[ETCI\TT0]) ∧ (E-crC* ⋧ E-crCS^[TT0]) =:: [rat']E-crCS^[ETCI\TT0] is basically independent of E-crCS^[TT0]] then go on;

7'') if [E-crCS^[ETCI\{E-crC*}] = PM =:: [rat]'transforming claim([nPE] TT0) into claim([PE]ETCI)'] then output 'CBN([mat]ETCI) is PE' & **stop**.

(Mathematical) [CRISPR]Theorem about [mat^AI]CC for <[internal]input ::= CBN([rat | mat CRISPR]ETCI)>: Any [CRISPR]ETCI is PE. [495,577]

Legend: test1-3 defines in FSTPtech ETCI's canonical CI in CBN^[FOL]-KR = in AI^[SPL]-KR = in AI^[FOL]-KR — initially once iterated (incl. test4-7), then not repeated. test4-7 and test4'-7' show for this [SPL∨FOL]ETCI its [rat&matFSTP]CC, assuming ETCI's 'area of discourse' is known/used in [mat]KR in Cartesian coordinates) and test4''-7'' its [mat^AI]CC. I.e.: The middle box shows the FSTP-Test as AI^[FOL]-test, with AI^[FOL] & the FSTP-Test by the natural development substantially simplified as follows: For any ETCI set, such as the {[CRISPR]ETCI}, each ∈'s E-crCS has the property that any of its E-crC's defining universe has only a single T-value. This simplification implies the surprisingly powerful [CRISPR]Theorem (in the thin bottom box) and even much more general 'BioETCIs'. They are fully on ETCIs' AIs depending, as mathematically being derived from them in preceding FSTP-mails, starting with[495/p.9] / **2.a)** (here put into a slightly modified KR for sake of uniformity).

Excerpt from the FSTP-Project's Reference List (as of 31.12.2019).

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

[480] S. Schindler: "A Fresh Look at the USPTO's PE-Guideline — by Andrei Iancu before the AEI", pub. 17.07.2018*)

[488] S. Schindler: "*UC*'s vs. *Broad/MIT/Harvard*'s CRISPR Patents & the Supreme Court's Framework", Part I, publ. 20.09..2018*)

[495] S. Schindler, B. Wittig: "*UC*'s vs. *Broad's* CRISPR Patents …", Part III, publ. 30.01.2019*)

[504] USPTO: The 2019 §§ 101&112 Guidelines, 07.01.2019*)

[508] B. Wittig, B. Wegner, S. Schindler, C. Negrutiu, D. Schönberg, J. Schulze, R. Wetzler: "*UC*'s vs. *Broad/MIT/Harvard*'s CRISPR Patents & the Supreme Court's Framework — Graphical Support in [(M)BIO]ETCI Specification', Part V", to be pub. In Jan.20.

[566] USPTO: The 2019 § 101 October PE Guideline, 18.10.2019*)

[573] S. Schindler: "An Unnoticed AI Requ. Met by the Supreme Court's PE Philosophy ...", pub. 09.12.2019*)

[575] B. Wegner, B. Wittig, S. Schindler, C. Negrutiu, D. Schönberg, J. Schulze, R. Wetzler: "Mathematically Modeling the Meaning of FSTPtech Specifications of ETCIs", in prep.

[576] S. Schindler: "The 'AI[SPL]-test mod(SPL) ≙ FSTP-Test' is the Strong PE-Test ∀ ETCIs …", pub. 03.01.2020*)

[577] S. Schindler: "The USPTO's PE-Guidance is still Mute about 'Wild Preemptivity' — …", pub.19.12.2019*)

[584] B.Grant: "… life science has moved us closer to a complete understanding of what makes us human …", The Scientist, 20.12.2019*).

[585] D. Kwon: "Hundreds of CRISPR patents have been granted … and the number of applications continues to grow at a rapid pace.", The Scientist, 15.07.2019*).

) *The complete FSTP Ref. List & ∀ documents on www.FSTP-expert-system.com

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[2] **.a** A PE [*ratBIO*]ETCI is by *Alice* defined as a pair <[nPE]TT0, APP> of ●an [nPErat]TT0, being **1.)**an invention, and ●an APP, being **2.)**a [rat]application of this TT0 (i.e. "**using/needing**, **'U/N'**, **TT0**"[503]), and being **3.)**transforming the nature of this TT0 (i.e. not expanding the domain of an EcrC needed for completely defining it nor increasing these [rat]EcrCs' minimal number, here called "**conservative**"), and being **4.)**together with TT0 significantly more than TT0 alone (i.e. comprises a [rat]EcrC basically [rat]independent of TT0). Moreover holds w.l.o.g.: **5.)**∀ [rat]EcrCs are basically [rat]independent.

Proof: It shows that from these 5 [rat]ETCI-properties follows its being truly [ratPE]robust, as a [ratBIO/PE]ETCI passes the 7 [rat]PE-FSTP.testo. Indeed holds: **1.)&2.)**implies by passing FSTP.test1)-4), **3.)**implies passing test5), **4.)**implies passing test6), and **5.)**implies passing test7). **q.e.d.**

.b The well-axiomizability of US/SPL's notions — SPL interpreted as by the Supreme Court's framework required — and the many mathematical interrelations between these notions, such as the '[CRISPR]Theorem about [mat^AI]CC', imply that [mat^AI]CC undeniably embodies that it is a clean-cut science, in FSTPtech called 'Virtual Physics'. Due to [mat^AI]CC's strong similarity to the well-known Hamilton-Jacobi Theory in Physics, as well as to its mapping of its classic version into its elementary particle version, this Virtual Physics clearly paves the way into the 8th earthly Continent[577] of ETCI — just as Newton's/Leibniz's cognitions paved the ways for the then societies' industrialization.

These very general statements and the derivation of the exemplary [CRISPR]Theorem shall indicate that all [FOL]ETCIs and their patents by their new application areas will enable increasing and leveraging on any economy's & any …. & any life-science's innovativity — more easily & rapidly than ever before.