A) THE INNOVATION EXPERT SYSTEM "IES"/ PHILOSOPHY & FUNCTIONALITY, B) MATHEMATICAL FUNDAMENT, C) PROTOTYPE OF THE FIRST PART

I. A C(laimed) I(nvention)'s Being as eKNOW: eK-Kinds & eK-Reps

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

III. Testing a C(laimed) I(nvention) for Satisfying Substantive Patent Law

IV. SEMI-AUTOM. GEN. for a CI by FSTP-Test ALL eKNOW + ASTs

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

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

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ABSTRACT OF THIS PRESENTATION' FORMAT: SCREEN SHOTS & ABSTRACTS

For each of the 6 'screen shots' belonging to the speech, there is an abstract of its oral presentation. This abstract summarizes the oral message of the screen shot, by explaining its topics in more detail – thus ***MAKING NOTES SUPERFLUOUS***.

For a given "**Claimed Invention, CI**", this screen shot reports by its colors – indicating the philosophy of the FSTP project – about the objective of "**Substantive Patent Law, SPL**" technology (SPL in the US: **35 USC §§ 101/102/103/112**), alias "**Innovation Technology**" developed therein, and about the eKnowledge based prototype of its "**Innovation Expert System, IES**" focused on this specific "**Emerging Technology, ET**", but capable of dealing with **all** (ET) CIs.. I.e.: The colors represent, for a CI and by means of this IES, the different issues ●in legally representing/analyzing this CI by the "**Facts Screening/Transforming/Presenting, FSTP**"-Test and its "**Arguable Subtests, ASTs**" (for verifying it satisfies SPL) as well as ●in defending it by "**Legal Argument Chains, LACs**", which are derived from the ASTs and reproduced under the control of "**User Interface Entities, UIEs**".

These issues are: ●semi-automatically generating of CI **all** relevant eKNOW and **all** ASTs by the FSTP-Test – induced by the US Supreme Court's *KSR/Bilski/Mayo/Myriad/Biosig/Alice* decisions as to the 3 hitherto worldwide evergreen obscurities in SPL – thus performing the CI's SPL test and protect it against any SPL attack, and ● automatically deriving and/or semi-automatically generating from **all** ASTs in IES's calibration mode **all** (modulo redundancies) LACs and then, in IES's arguing mode, automatically reproducing the respectively needed LAC, in both modes under the control of UIEs.

For more information about the FSTP project see www.FSTP-Expert-System.com.

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

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

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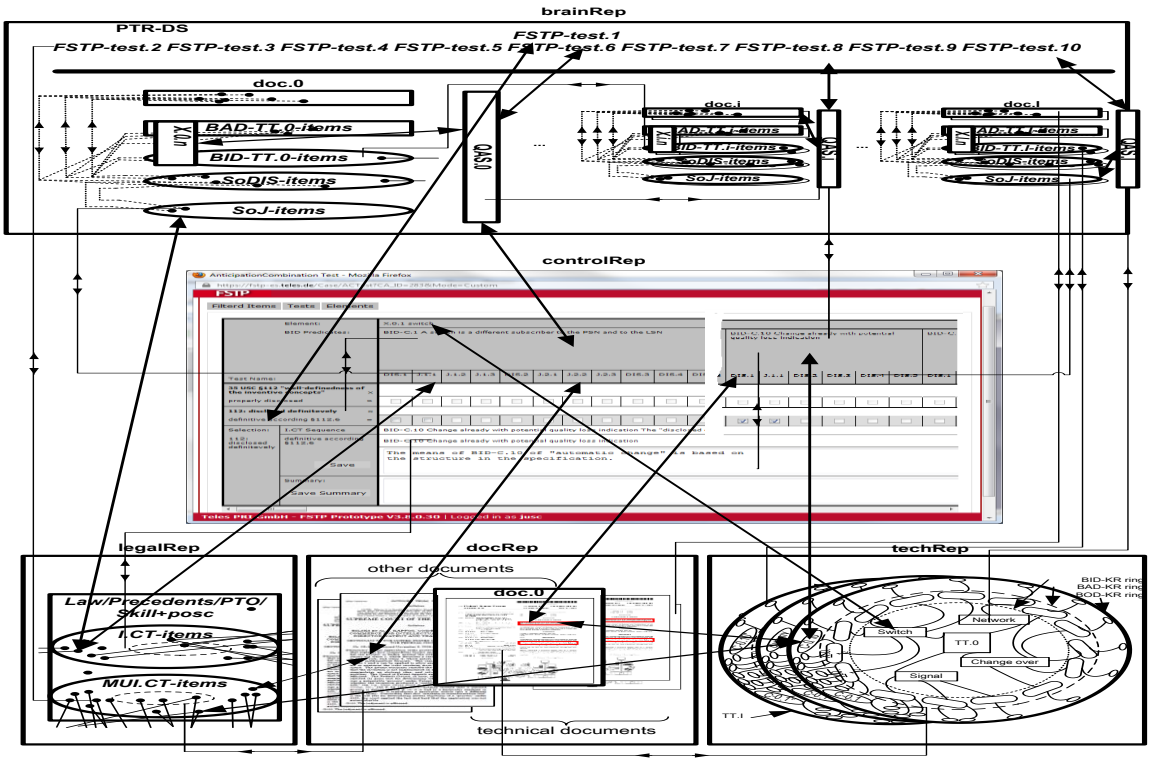
ABSTRACT OF I.

- Patents in general are very simple, allegedly precisely described, practical solutions of problems.
- As usual in engineering, they are of "first order logic" and even finite – both probably indispensable for making the patenting philosophy work.
- For designing a technology efficiently supporting patent professionals, distinguishing between 3 elementary knowledge kinds is crucial – in KR or other branches of AI never distinguished.
- Legal argument chains (LACs) then determine the eventually required kind of knowledge – it is highly personalizable as to its legal representation and its I/O features.
- Mathematical modeling provides the basis for the mathematical FSTP-Test outlined/used in II- V.
- The legal correctness of such a system would be audited by PWC/EY/DT/… just as that of ERPs.
- The normal patent practitioner need not care for mathematical/technical "soundness" proofs.

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



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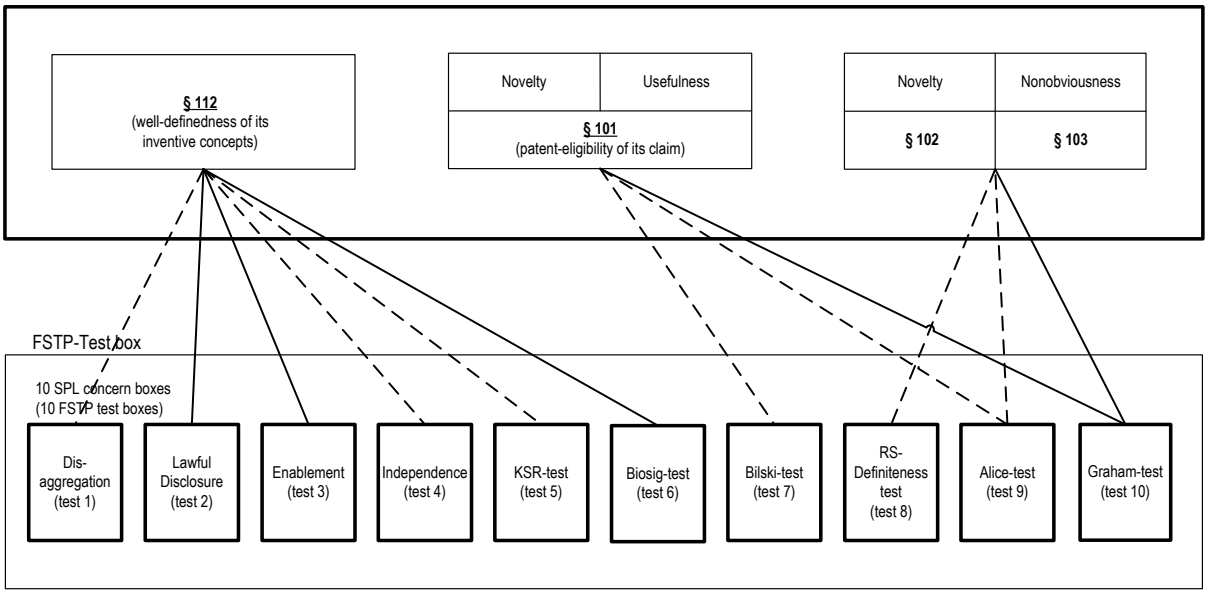
ABSTRACT OF II.

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

III. Testing a C(laimed) I(nvention) for Satisfying Substantive Patent Law

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



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ABSTRACT OF III.

- The SPL_box, on top, shows the 4 Sections of 35 USC, the requirements of which must be met by the ET CI under SPL test.
- The FSTP-Test_box, at the bottom, shows the 10 concerns of SPL that these 4 Sections' requirements encode and which hence must be satisfied by the ET CI under SPL test.
- The FSTP-test.1/4/5/8 are not yet noticed by SPL precedents, but they are necessary for ET CIs.
- The bold lines show what is tested (rudimentarily) by the classical claim construction for an ET CI.
- The dashed lines show what additionally must indispensably be additionally tested for an ET CI (more exactly) for its refined claim construction – due to an ET CI's invisibility/intangibility/fictionality.
- All tests must be executed for any set S of inventive concepts generating an ET CI – of which usually several (i.e. a finite number of) sets exist. Here is assumed (in IV), for simplicity, that just 1 S exists..
- **If an ET CI passes the whole FSTP-Test, its patent-eligibility and patentability cannot be questioned. This ET CI is arbitrarily robust!!!**
- **If an ET CI passes the whole FSTP-Test, its being infringed by an ET CI* is easily, exactly, and non-deniably determinable. This ET CI is arbitrarily transparent!!!**

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

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

test1 The FSTP-Test prompts the user to input <no "**multi-interpretable CI**", i.e. ∃1 S only [150,58]>
- **(a)** ∀TT.i ∧ 0≤i≤I=|RS| ∧ 1≤n≤N : ∀ BAD-crCin of TT.0;
- **(b)** ∀1≤n≤N justof: BAD-crC0n is **definite**; <see [150,137]>
- **(c)** S::={BED-crC0kn|1≤n≤N: BAD-crC0n ^{duc}= $\wedge^{1\le kn\le Kn}$BED-crC0kn ∧ K::=$\sum^{1\le n\le N}$Kⁿ};
- **(d)** ∀1≤kn≤Kⁿ ∧ 1≤n≤N justof: BED-crC0kn is **definite**;
- **(e)** TT0 ::= $\wedge^{1\le n\le N}$ $\wedge^{1\le kn\le Kn}$BED-inC0kn is **definite;** <i.e. TT0's total inventivity[150 5.d)5.e)], see [150,137]>

test2 ∧ ∀ ϵ S for justof: their **lawful disclosure**;
test3 ∧ ∀ ϵ S for justof: their **enablement of TT.0**;
test4 ∧ ∀ ϵ S for justof: their **independence**; <see [150,137]>
test5 ∧ ∀ ϵ S for justof by ***KSR*-test:** **S ∩ (posc ∪ RS) = ∅** ; <see [150,137]>
test6 ∧ ∀ ϵ S for justof by ***Biosig*-test:** **S is definite**; <see [150,151]>
test7 ∧ for S justof by ***Bilski*-test**[i]: **S is non-preemptive**; <see [150,137]>
test8 ∧ for S **RS-Definiteness test**: by defining BED*-AN matrix by BED*-inCik ::= N ∀ 1≤n≤N ∧ 1≤k≤Kⁿ ∧ 0≤i≤I;
BED*-inC0k ::= A if BED-inC0k ϵ posc; <see [150,137]>
BED*-inCik ::= A if BED-inCik = BED-inC0k, 1≤i≤I;
test9 ∧ for S justof by ***Alice*-test:** **S is patent-eligible** as $P^{FSTP} \gg \wedge^{1\le n\le N}$BAD-crC0nk;
test10 ∧ for S justof by ***Graham*[ii]-test:** **S is patentable on $S^{pat\text{-}el} \subset$ S**; <see [150,137]>

[i] The **"*Bilski*-Test"** – testing TT0 for not being preemptive, as of *Alice* – prompts the user for input&justof:
- **1)** P^{Alice} ::= being more than $\wedge^{1\le n\le N}$BAD-crC0n, is **definite**; <i.e., P^{Alice} may describe a TT0* embodying less or more inventivity than the known TT0's total inventivity[150 5.d)] and potentially being ϵ scope(TT0)>
- **2)** If enlarging TT0's truth set alternatively its scope [58], any such new TT0* does not belong to scope(TT0). <If 1) & 2) apply, then TT0 is "not an abstract idea", hence not preemptive [151,137]>

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

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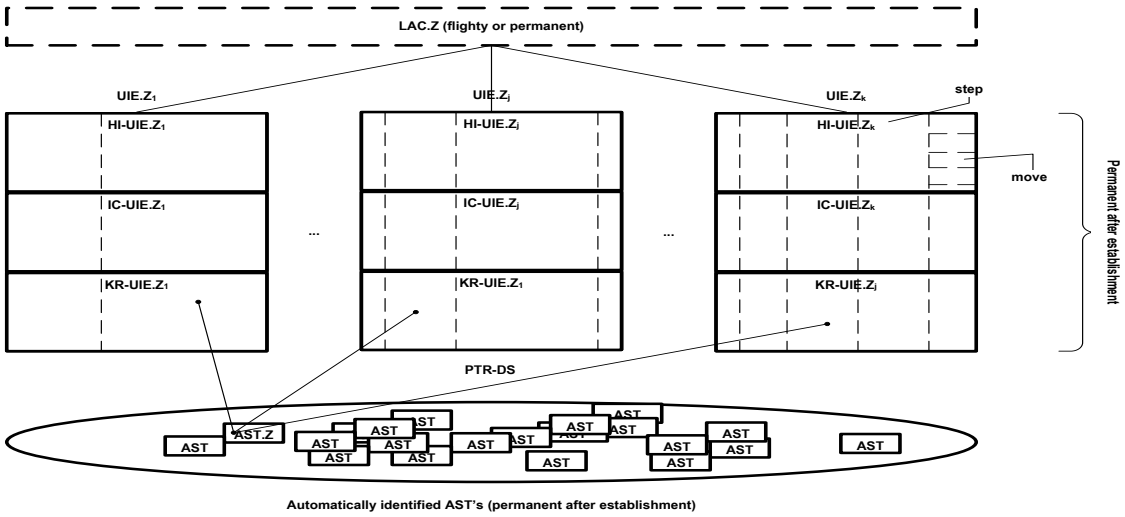
ABSTRACT OF IV.

- Where the in/output of executing the FSTP-Test on a CI is located in the IES model is shown in IV.
- The FSTP-Test consists of 10 FSTP test.o, in total checking of a CI, whether it is patent-eligible and patentable. This is the case iff it meets the 10/11 concerns legally encoded by SPL, i.e. by 35 USC §§ 101/102/103/112. I.e.: iff this CI passes all the 10 FSTP test.o on set S (see **test.1(a)**).
- It prompts the user to input, for this CI from doc0, first its elements X0n and their modeled compound inventive concepts BAD-X0n and as many elementary inventive concepts BED-crC0nk as it is able to identify, 1≤n≤N, , 1≤k≤Kⁿ, which defines CI's S.
- [It takes, in principle, peer steps to those of doc.0 for any prior art document.i, 1≤i≤I, if there is any].
- Its test.1 checks 2 such SPL concerns, the remaining 9 test.o check each 1 such concern. Thereby the concerns encoded by § 112 are checked by test.o, 1≤o≤5; those encoded by § 101 are checked by test.o, 6≤o≤9; those encoded by §§ 102/103 are checked by test.10 (**Changes to be expected!**).
- It is the maximal meaningful "check list" of CI satisfying SPL.
- It in particular comprises/provides all ASTs.
- The FSTP-Test is the canonical procedure for acquiring **all** technically and legally relevant information about a CI (based on user/posc input) – stored as its eKNOW in a data structure DS – such that **any** meaningful question about CI satisfying SPL can instantly be answered by it.
- Thereby the evaluation of any such answer is subject to judicial evaluation – but under much more scrutiny than any other test discussed hitherto, e.g. TSM or MoT. It namely is complete and the judicial/posc evaluations occur on the trivial BED level, too, i.e.: "rational" level of notional resolution.
- How the DS of a CI's FSTP-Test, i.e. of a CI's SPL test, is interrelated to the IES user – i.e. invoked/controlled/configured/annotated/…/used by it – is explained in V/VI.

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



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ABSTRACT OF V.

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

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

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

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

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ABSTRACT OF VI.

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