FICCI Representation on Draft Guidelines for Examination of Computer Related Inventions (CRIs)

On June 28th, India Patent Office released draft Guidelines for Examination of Computer Related Inventions (CRI) to invite public comments. The Guidelines provide standards/procedures to determine whether the CRI claims are falling under the scope of non-patentable subject matter under Section 3k of India Patent Act 1970 (as amended). We appreciate IPO's great efforts in drafting the Guidelines, as well as offering the opportunities for social public to submit comments. IPO's transparency and openness in IP legislation work is highly applauded. We also appreciate IPO's desire, by working on the Guidelines, to foster uniformity and consistency in the examination of such inventions.

However, the draft Guidelines have interpreted and applied Section 3(k) in a more restrictive way to conclude as to what is patentable, which is a cause of concern to various stakeholders. The subject matter eligible for patentability as explained in the Guidelines is in alteration with the law. The Guidelines should explain the legal standing and implementation of the law, rather than altering the law itself. We have particular concern on the interpretation of Section 3(k) by the IPO to reach a conclusion on patentability of CRI inventions.

While reviewing the draft guidelines for examination of computer related inventions, it is noted that several examples/Illustrations have used in the guidelines to exhibit approach adopted by of the patent office while examining/deciding applications related to excluded categories.

It is not clear from these examples/illustrations that how these relate to the excluded subject matter of section 3(k). No clear explanation has been provided.

In this regard, we have following suggestions:
 a. All examples/illustrations should be given along with the application number/grant number/case citation.
 b. It appears that except one IPAB decision, all other examples/illustrations are from the Patent Office. However, there are many cases granted by the Patent Office which are contradictory to the examples given in the guidelines. In this scenario, how the examples/illustrations given in the guidelines will guide the Examiners and the Applicants?
 c. The authority deciding/granting/refusing these cases should be identified.
 d. The explanation given by the authority while deciding/refusing/granting the cases should be incorporated along with each example/illustration given.
 e. Such examples/illustrations where the Applicant opted for abandoning the application by not responding to the examination report or not attending the hearing should not be incorporated in the guidelines. In such cases the Applicant had wished not to contest the claims.
 f. Such examples/illustrations where the Applicant had withdrawn the claims in response to an objection from the Patent Office should not be incorporated in the guidelines. See illustration 15 and 16 on page numbers 41 and 42. In such cases the Applicant had wished not to contest the claims not because they are unpatentable. Many cases the Applicants dropped the

claims/application due to various considerations such as no commercial interest, cannot incur more expenses, not well supported in the specification etc.

g. Only negative examples/illustrations are included. It is suggested to incorporate those examples/illustrations which have been contentious while being prosecuted by the patent office but later allowed/granted.

SPECIFIC COMMENTS

1. Software implemented in General Purpose Computer: Not patentable, as per guidelines

Negative Effect: Following could be the potential negative effects if the interpretation given in the guidelines:

a. There would be an extra burden on the software companies to now also put their resources to now carry out innovations in hardware as well, which is not their mandate at all, should they want their novel software to be patented.

b. It would be far more easier to overcome the infringement by third parties merely by implementing the novel software on the known/existing/different hardware, because the claims would be granted on novel software embedded on novel hardware.

c. Would prove to be a disincentive for companies to research on softwares which are able to show technical advance

d. Put Indian stand exclusive from rest of the world where there is no mandate of such a linkage (novel software on a novel hardware)

As per Section 5.4.5 of the Guidelines, "*The question therefore, is whether a computer program loaded on a general purpose known computer or related devices can be held patentable. Keeping in view the spirit of law **the answer is in the negative**.*" (Emphasis added.)

Further per Section 5.4.6, "*a computer program which may work on any general purpose known computer does not meet the requirement of the law. For considering the patentability of computer program in combination with hardware features, **the hardware portion has to be something more than general purpose machine**.*" (Emphasis added.)

Further, the Guidelines provide a number of negative illustrations. Many of these illustrations comply with requirement of technical effect and technical advancement defined under Section 3.15 of the Guidelines, but they are not patentable subject matters only because the software is running on a general purpose machine. These illustrations give rise to significant concerns for the various stakeholders.

The answer of "negative" in Section 5.4.5 above is too absolute. For CRI inventions, if the software portion does not comply with statutory requirements of India Patent Act 1970 (as amended) like pure mental

activities or pure mathematics without any technical application, then there is no doubt that the combination of such non-patentable software portion with a general purpose machine should in deed not be held patentable. However, if the software portion does solve a technical problem in a technical field and achieve technical effects, it is our understanding the combination of such innovative software portion with a general purpose machine should be patentable.

We are pleased to note Section 5.4.1 of the Guidelines state "Since *patents are granted to inventions whether products or processes, in all fields of technology, it is pertinent to ascertain from nature of the claimed method/process whether it relates to technological field*", Section 5.4.3 states "*any method/process relating to non-technological field shall not be considered patentable*", and Section 3.15 defines technical effect as "*solution to a technical problem, which the invention taken as a whole, tends to overcome*". But, "technical effect/technology field" should not be interpreted as "hardware portion has to be something more than a general purpose machine". In today's IT industry, much of the technological innovation is achieved through new innovative software development as opposed to hardware innovation due to the fact that innovative software can achieve the same technical effect without the added cost of hardware development or changes, Equalizing "technical effect/technology field" to "combination with hardware features" and "the hardware portion has to be something more than general purpose machine" will substantially and unreasonably exclude those innovation activities in software field from patent protection.

The India Patent Act 1970 (as amended) defines inventions in Section 2(j) as "*a new product or process involving an inventive step and capable of industrial application*". Thus, a patent may be granted for new products or processes in all fields of technology. Section 2(l) of the Act, defines a new invention as "any invention or technology which has not been anticipated by publication in any document and or used in any country or elsewhere in the world before the date of filing of patent application and complete specification, i.e., the subject matter has not fallen in public domain or that it does not form part of the state of the art". The definition of new invention states any invention or technology. The technical effect brought about by a novel computer program running on a general purpose computer also lends a technical character to the invention which should be considered as a technology and thus patentable, the same as a non-novel computer program running on a computer with novel hardware features, or a novel computer program running on a computer with either known or novel hardware features.

As pointed out in Section 5.4.5 in the Guidelines, "*Essentially, all computer programs need a combination with some hardware for its functionality*". For considering the patentability of computer program in combination with hardware features, it is the invention as a whole, other than the hardware portion specifically, that has to be something more than general purpose machines. If the innovation of a computer program implemented invention solely lies in the software portion and the software portion is solving a specific technical problem and it achieves a technical effect, then the innovative software portion combined with a general purpose machine, as a whole invention, should not be excluded from being patentable subject matters, just the same as if the novelty exclusively lies in the hardware portion or lies in the combination of both software and hardware. It's not reasonable to exclude pure software innovation from patentable subject matters and put forward mandatory requirement of "something more than general

purpose machine" for the hardware portion. In current IT industry, it is a technology or business decision about whether to implement the innovative ideas through hardware or software, or the combination thereof, and whether to implement the innovative ideas on general purpose computers or specific usage computers etc. Such technology choices or business decisions should not affect the substance of subject matter patentability of innovative software. Since patents promote innovation, allowing patents for hardware but not software encourages development and implementation in hardware instead of software, and it is apparent that the growth in terms of software sector is much larger than the hardware sector. Thus it is strange to encourage old technology over new technology - the very opposite of the purpose of the patent system.

In addition to above comments regarding the standard in determining the subject matter issue for computer related inventions, we also suggest that IPO allows computer readable program media claims and computer program product claims as long as the program stored on the media could bring out technical effect and advancement to solve a specific technical problem when the program is running. It should not make any difference whether the software program is self-contained or is put on a record carrier. Patent claims related to software inventions stored on the record carrier is the only way for a patentee to exploit and extract the full value for his invention from the manufactures of the software. The global trend is to extend protection to program claims or program media claims or program signal claims in order to coincide with the way software is actually commercialized and to provide a basis for direct patent infringement. Computer Program Media claims have been allowed in most of the major jurisdictions, like US, EP, Japan, Australia, Korea, Taiwan etc.

Undoubtedly, computer-implemented inventions forms the heart of innovations that are created in the Information Age and are on par with the most ingenious inventive acts that mankind has ever known. Software inventions play an important role in countless products and systems, and many of those inventions would likely not have been developed without the protections the patent system provides. Since a substantially large portion of exports from India are related to software, it becomes prudent that the IPO encourages patenting of software implemented inventions, which will protect Indian Industry to a large extent. Also, it should be noted that a substantial portion of the revenue of software industry is from exports. Since software implemented inventions are patentable in the US, EP, JP, CN and many other jurisdictions, companies patent such inventions in these jurisdictions and then impose their patent preventing companies in India from exporting products related to software. The patent ecosystem in India should nurture the software industry by adopting a more receptive approach, to establish a culture of innovation. This will assist the software industry to prosper by developing new products, have improved technical growth and become a leader in innovation. Most Indian companies are obtaining patent protection for their products in the US and EP jurisdictions, and it is sad to notice that they do not have a patent on these products in India.

International experience:
For IPO's reference, although some of other major jurisdictions also exclude "computer program as such" (e.g. Europe and China) or require the hardware portion to be recited in claims of software implemented inventions (e.g. Japan), none of them has adopted the requirement of "the hardware portion has to be

something more than general purpose machine". (Emphasis added.)

Article 52 (2)(3) of EPC only excludes the patentability of "***computer program as such***". EPO has interpreted the phrase "***as such***" limited to those computer programs implemented inventions which do not have technical characters and technical effects. So the examination of subject matter issue of computer-implemented-inventions in EPO is focused on "technicity". The <Guidelines for Examination in the European Patent Office with respect to Programs for Computers> specify that if a computer program is capable of bringing about, when running on a computer, a further technical effect going beyond those normal physical interaction between the program and the computer, it is not excluded from patentability. The technical effect brought about by a computer program lends a technical character to the computer program.

The EPO Board of Appeals states in T 26/86 OJ 1988 that "*a mix may or may not be patentable. **If, for instance, a non-patentable (e.g., mathematical, mental or business) method is implemented by running a program on a general-purpose computer, the fact alone that the computer consists of hardware does not render the method patentable if said hardware is purely conventional and no technical contribution to that (computer) art is made by the implementation.** However, if a contribution to that art can be found either in a technical problem (to be) solved, or in a technical effect achieved by the solution, said mix may not be excluded from patentability under Articles 52(2) and (3) EPC, following T 38/86, OJ EPO 1990, page 384*". (Emphasis added.) At first glance, this EPO decision also requires "more than general purpose hardware" like the India draft Guidelines. However, the pre-condition is "***If, for instance, a non-patentable method…***", which means only if the method (software portion) is non-patentable, then whether the hardware is general purpose should be further examined.

In China, Article 2 of China Patent Law provides that "*Inventions mean new technical solutions proposed for a product, a process or the improvement thereof*", which is similar to the definition of "inventions" under Section 2(j) of India Patent Act 1970 (as amended). According to SIPO Examination Guidelines, if a computer program implemented invention is solely a "**computer program per se**", then it is not patentable. And SIPO Examination Guidelines define "computer program per se" as "*coded instruction sequence which can be executed by a computer*", and include source programs and object programs. For computer program implemented inventions, if they use technical measures to solve a technical problem and obtain corresponding technical effect, they are not "computer program per se" and should be patentable. It is clear that in China, computer program implemented inventions do not need to combine with computer hardware or make changes to computer hardware in order to be patentable. Hardware feature is not necessarily required in claims of software implemented inventions.

In Japan, "Invention" means the highly advanced creation of technical ideas utilizing a law of nature (Article 29 of Japan Patent Law). Although JPO requires that the "hardware resource usage" needs to be recited in the computer program implemented claims, there is no requirement by JPO that the hardware should be something more than a general purpose machine/hardware.

We now comment upon various definitions/contents included in the Draft Guidelines for Examination of Computer Related Inventions (CRIs):

2. Algorithm

There is an issue regarding the definition of algorithms as given in section 3.7.

While referring to the concise oxford dictionary, it is noticed that the definition of algorithm is in the field of mathematics.
The correct way of using algorithm is mathematical algorithm.

Algorithms are abstract mathematical principles.

The word "algorithm" is derived from the name of ninth century Persian Muslim mathematician Abu Abdullah Muhammad ibn Musa Al-Khwarizmi, who was part of the royal court of Baghdad. Al-Khwarizmi wrote a treatise in 825 AD on "Calculation with Hindu numerals". The aforesaid treatise was translated into Latin in the 12th century as "*Algoritmi de numeroIndorum*". Thus it can be observed that the term "algoritmi" means "calculation methods". The intrusive "th" is most likely due to a false cognate with the Greek word "arithmos" which means "numbers".

Thus, taking into consideration the aforesaid background, the term "algorithm" which is derived from the phrase "*Algoritmi de numeroIndorum*" means "calculation methods involving numbers". More particularly, the term "algorithm" means a step-by-step procedure consisting of a definite number of steps, each of which is performable by a human being for solving mathematical problems in the branch of algebra and more specifically limited to mathematical operations addition, subtraction, Multiplication and division on Hindu-Arabic numerals.

Although in due course of time, the word "algorithm" has been used in various other areas, in the respective areas, it is still understood to mean step-by-step calculation method consisting of a definite number of steps, each of which is performable by a human being and that involve operations on numbers.

Thus, an algorithm must have the following characteristics:

- (a)   it is a "step-by-step" procedure;
- (b)   the "step-by-step" procedure contains a minimum of two and a maximum of a finite number of steps, i.e. number of steps "n" satisfies the equation $2<n<\infty$;
- (c)   each step of the procedure contains unambiguous and sufficient information which can enable the step to be performed even by a person not skilled in the particular art;
- (d)   the purpose of the step-by-step procedure is to solve a mathematical problem;
- (e)   the step-by-step procedure is performable only by a human being; and
- (f)   the step-by-step procedure involves operations on numbers.

If a procedure does not have all of the aforesaid characteristics, the same cannot be and is not considered as algorithm and is referred to as a method. Thus, it can be said that an algorithm is a subset of the term "method" and a method qualifies to be called an algorithm only when the same satisfies all of the aforesaid criteria. On the other hand, if a procedure does not qualify each of the aforesaid criteria, the said though remains as a "method" but not as algorithm.

Thus, by way of example, if the problem is not mathematical in nature, a procedure to solve the same cannot be considered as an algorithm. Alternatively, if at least one step in a sequence of steps is performed by a machine, the sequence of steps cannot be considered to mean "algorithm". Alternatively, if none of the steps in a sequence of steps involves operations on numbers, the sequence of steps cannot be considered to mean "algorithm".

Further, example 4 on page 15 cannot be considered to be algorithm. An example of algorithm can be: "an algorithm to convert <u>binary-coded decimal numbers</u> into pure <u>binary numbers</u>".

2. **Mathematical methods**

It is difficult to agree with the definition of mathematical methods as given in section 3.17.

The claims cannot be termed as mathematical method merely because of the reason that the method involves operation of numbers.

While deciding whether the claims fall within the scope of mathematical method, the following factors may be considered:
   a. the purpose of the method claimed is technical then that method cannot be considered as mathematical method for the reason that the method is for that technical purpose only;
   For e.g.: A computer implemented method with mathematical steps for simulating the performance of a circuit subject to 1/f noise constitutes an adequately defined technical purpose and cannot be simply termed as mathematical method. (T 1227/05- 3.5.01)
   b. the method shows any technical advancement; and
   c. the method shows any real word application.

In case, the method shows any of the above factors, it should not be considered as mathematical method.

Further, in the application number 1503/MUMNP/2007, the Controller has granted the following claim:
   1. A wireless device connection quality determination apparatus, comprising:
   a user manager operable to receive a plurality of communications messages as recorded by the wireless device, where the plurality of communications messages comprise transmitted messages sent from the wireless device over a wireless communications network; and
   a connection quality module operable to generate a connection quality record comprising a

connection quality characteristic based on a detection of a predetermined sequence of communications messages within the plurality of communications messages, wherein the plurality of communications messages comprise messages in a Universal Mobile Telephone System ("UMTS") protocol, wherein the connection quality characteristic comprises an access failure, and wherein the connection quality module   determines the access failure as:

number of access failures = ∑ access attempts — ∑ access successes

where:

∑ *access attempts =*

a sum of the number of unique RRC_Connection_Request Messages of a first type with an ESTABLISHMENT CAUSE comprising one of an ORIGINATING_CONVERSATIONAL_CALL, a TERMINATING_CONVERSATIONAL_CALL, and an EMERGENCY_CALL;

plus

a sum of the number of unique RRC_Connection_Request Messages of a second type with the ESTABLISHMENTCAUSE = REGISTRATION followed by either a CM_SERVICE_REQUEST_NAS_Signaling with SERV_TYPE =1, or a SETUP_NAS_Signaling message; and

∑ *access successes =*

a sum of the number of ALERTING_NAS_Signaling messages associated with ones of the first type and the second type of the unique RRC_Connection_Request messages, respectively;

plus

a sum of the number of CONNECT_NAS_Signaling messages associated with ones of the first type and the second type of the unique RRC_Connection_Request messages, respectively, that do not have an associated ALERTING_NAS_Signaling message;

plus

a sum of the number of CONNECT_ACK_NAS_Signaling messages associated with ones of the first type and the second type of the unique RRC_Connection_Request messages, respectively, that do not have an associated ALERTING_NAS_Signaling message or an associated CONNECT_NAS_Signaling message.

4.   Business Methods

The claims cannot be termed as business method merely considering the parameters defined in section 3.18.

Instead, it is also required to consider the application or use of the method. If the application or use of the method is technical and involves technical advancement, it cannot be considered as business method. Further, while reviewing/examining the claims, it is necessary to review the invention as a whole and determine the essence of the invention. If the essence of the invention is in the technical means/method then it cannot be considered as business method.

For e.g.

(EP 1301912)

The subject of this claim is execution of authorized online transaction, by performing the communication in two different paths.

The claim:

1. A method of operating a transaction processing system enabling users to authorize transactions, said system comprising a central transaction processing system (19) having at least a first data communications interface and a second data communications interface, comprising the following steps carried out by said central transaction processing system (19):

receiving transaction data from an offering party, relating to a specific transaction to be authorized by a user, and receiving a first transaction reference (TRN) relating to and uniquely identifying said specific transaction, via a first data communication path (16), at said first data communications interface;

generating a second transaction reference (TRR) which is different to the first transaction reference (TRN) and which uniquely identifies the transaction within the central transaction processing system (19);

sending said second transaction reference (TRR) to the offering party;

after receiving said transaction data, conducting communications over a second data communication path (22), different to said first data communication path, with said user over said second data communications interface;

using said second path, conducting a secure access procedure in which authentication data is received and said authentication data is verified;

using said second path, receiving said first transaction reference (TRN) relating to and uniquely identifying said specific transaction from said user, said transaction reference not being previously transmitted to said user in said second communication path (22);

using said second path, receiving confirmation from said user; and in response to said confirmation, transmitting an authorization signal to authorize said transaction,

said authorization signal including said second transaction reference (TRR), wherein said second transaction reference (TRR) is not known to said user.

In this case, the essence of the invention does not reside in the business process as such, but rather in the communication means being used. Hence, the contribution of the invention is brought about in the communication infrastructure, as taught in a unique manner from the features of the invention (such the type communication that is required between two paths).

5. Method/process

As regards the example 1 on page 13 for mathematical method, please refer to our comments on mathematical method.

As regards the example 2 on page 14 for business method, please refer to our comments on business method.

The example 3 on page 15 cannot be considered as computer program **per se**. To decide whether the claims fall within the scope of computer program per se, the following practice may be considered:
   a) Technical advancement (since the computer program per se is not technical in nature, it is essential that the invention provides a technical advancement over the prior art); or
   b) Necessary transformation between system components; or
   c) Real world application.
   d) In the invention including a computer program has industrial utility, it should not be considered as computer program per se.

6. Apparatus/system

It is not agreeable that the apparatus claims should always define inventive constructional hardware feature.

The Patent Act does not prescribe that the apparatus should have an inventive constructional hardware feature.

If a method/process provides technical advancement then the apparatus which is performing such method/process is patentable as well.

In order to examine whether the invention is a product or process in a technological field, the invention should be examined as a whole without dissecting it into components, and without focusing on a single component or a single subgroup of components.

The apparatus claims may be amended to show interconnectivity between various components and sub-components claimed.

In application number 1695/DLENP/2005 the Controller had suggested to amend the principal claim to clarify the inbuilt or associated technical features of the "device" (10) e.g. server, processor, memories etc. together with their couplings so as to provide for the workability of the inventive device. The Controller contended that the non-patentability on ground of section 3(k) of the Patents Act, 1970 needs to be viewed objectively. The Controller further suggested that after such amendment claim 1 will not fall under any of the excluded categories i.e. mathematical method, business method, computer program per se or algorithm under section 3(k). **This remark applies to section 6.2 as well.**

On page 20, serial number 5.4.5 and 5.4.6 it is mentioned that a computer programme loaded on a general purpose known computer or related devices can be held as not patentable. However, if the computer programme provides a technical advance over the prior art, it can be held as patentable. The criteria that the computer programme is loaded on to a general purpose known computer cannot be considered for

considering whether the claims are patentable or not.

Further, after all examination, if the Controller is of the opinion that the apparatus does not have any structural inventive features than at least one utility claim should be allowed.

7. Means plus Function

The means claims may be allowed if there is support in the specification. Further, if the means claims are amended to include reference numerals they may be allowed since the reference numerals would clearly identify the related structural feature to which the means relate to.

All means plus function claims cannot be considered to be falling within the scope of computer program per se. The intention of the drafter while drafting such claims is to include all possible alternative structural/non-structural limitations.

In case the means refer to software/hardware/firmware or a combination of software and hardware, the invention can be enabled by those who are skilled in the art. Thus in such cases means plus function claims should be allowed.

For the reasons mentioned above, we respectfully suggest that IPO reconsider its interpretation on "computer program per se" under Section 3(k) of India Patent Act 1970 (as amended) which will help in complying with the trend of technology development, better improve the development of Indian software industry and better tally with the practice of other major jurisdictions in the world.