How to get patents in healthcare

Presentations of information – which inventions can be patented?
Presenting today

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Presentations of information - which inventions can be patented?

What if your invention is ...

... for example
- a certain way of presenting data or
- an insulin pump menu/GUI or
- the timing of your alarm or
- a dialysis setup procedure, ...

Under which circumstances is a graphical user interface or are presentations of data patentable at the EPO?
Presentations of information - which inventions can be patented?

Agenda

- What is presentation of information (POI)?
- The 1st hurdle for POI
- The 2nd hurdle for POI features: Inventive step
  - the technical effect for presentation of information
  - assessment of technical effect: "what?" and "how?"
  - examples
  - graphical user interfaces
- Conclusion
What is presentation of information (POI)?

What is regarded as "presentation of information"?

- provision of information directed to a user
- both the content of the presented information and the manner of its presentation
- visual, audio, smell, haptic modalities
Presentations of information - which inventions can be patented?

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✔ What is presentation of information (POI)?
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The 1\textsuperscript{st} hurdle for POI

Exclusion from Patentability

- According to Art 52(2)(d) presentations of information is excluded \textbf{as such} from patentability.

- One technical feature in the claim is sufficient to avoid exclusion.

- For POI inventions the first hurdle is easily overcome via the presence of a \texttt{computer/display} or a \texttt{device/computer implemented step}

Art. 52 EPC
GL, F-IV, 3.9
Claims directed to computer-implemented inventions
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The 2nd hurdle for POI features

Inventive Step

- **When assessing the inventive step** of mixed type inventions involving both technical features and features presenting information, **all those features which contribute to the technical character of the invention are taken into account.**

- These also include the features relating to presentation of information which, when taken in isolation, are non-technical, but do, **in the context of the invention**, contribute to producing a **technical effect serving a technical purpose**, thereby contributing to the technical character of the invention.

Art. 56 EPC
see Guidelines for Examination in the EPO, G-VII, 5.4.
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The 2\textsuperscript{nd} hurdle for POI features: Inventive step

Assessment of technical effect in POI

Criteria

A feature defining a presentation of information \textit{produces} a technical effect if it

- \textit{credibly} assists the user
- \textit{in performing} a technical task
- \textit{by means of} a continued and/or \textit{guided} human-machine interaction process.

see Guidelines for Examination in the EPO, G-II, 3.7
T0336/14 (presentation of operating instructions/ GAMBRO)
The 2\textsuperscript{nd} hurdle for POI features: Inventive step

**Assessment of technical effect in POI**

... in performing a technical task ...

- invention relating to a casino game, business method (e.g. administration of a hospital)

- invention relating to the functioning of a system, e.g. dialysis machine or insulin pump, systems for diagnosing or therapy, protein structure or genotype prediction methods, ...
The 2nd hurdle for POI features: Inventive step

Assessment of technical effect in POI

What does "credibly assisting" mean?

- Is the assistance to perform the technical task objectively, reliably and causally linked to the feature?
- Equivalent to asking: Is a technical effect credibly achieved?
- Technical effect is not credibly achieved if it depends on subjective interests or preferences of the user

Art. 56 criterion
... credibly assists the user ...

T619/02 (Odour selection/QUEST International)
T1741/08 (GUI layout/SAP)
"human perception phenomena cannot be qualified as being of a technical nature"
The 2nd hurdle for POI features: Inventive step

Assessment of technical effect in POI

... **credibly** assists the user ...

Displaying a cancer stage in **colour-coding** instead of numerical values

Displaying a notification on the computer screen near the user's current visual focus of attention so that it can be seen immediately by the user

**Art. 56**
criterion
credibly assists the user...

credible assistance in achieving a technical task?

**your answer (please tick yes or no)**
The 2nd hurdle for POI features: Inventive step

Assessment of technical effect in POI

... by means of a **continued** and/or guided human-machine interaction process ...

- Displaying specifications or operating instructions of a device as **static** information

- Displaying internal state of a device relating to the internal functioning of the system, detected automatically, changes over time, **dynamically** updated, prompting the user to interact, e.g. for avoiding technical malfunctions

Art. 56 criterion
... by means of a continued and/or guided humane-machine interaction ...

**continued process?**
and/or
**guided human-machine interaction**

your answer?
Questions

now via chat to "All participants"
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The 2nd hurdle for POI features: Inventive step

Assessment of technical effect in POI

Further possible analysis to "content" and "manner"

A feature relating to presentation of information may commonly be considered to specify

i. the **cognitive content** of the presented information = "what" is presented?

ii. the **manner** in which the information is presented = "how" is the information presented?

("how"= features relating to the **form** or **arrangement** in which, or the **timing** at which, information is conveyed to the user)
The 2\textsuperscript{nd} hurdle for POI features: Inventive step

Assessment of technical effect in POI

Assessment of the "what" is presented:

**Non-technical** if the cognitive content of the information relates to
- a non-technical application/task (e.g. casino game)
- static information

**Technical** if the cognitive content of the information
- relates to an internal state prevailing in a technical system
- enables the user to properly operate this technical system
- typically prompts user interaction

Art. 56
see also Guidelines, G II, 3.7(i) first paragraph
The 2\textsuperscript{nd} hurdle for POI features: Inventive step

**Assessment of technical effect in POI**

Assessment of the "how" information is presented:

Normally **non-technical**

- considered to depend on **psychological** or other **subjective** factors
  (even if it arguably conveys information in a more appealing, lucid or logical way; lowering the cognitive burden no technical effect)

However, **technical if**

- it **credibly** assists a user in performing a **technical task**
  if it depends on **physical/physiological parameters**

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**Art. 56**

GL, G-II, 3.7(i) first paragraph

T1802/03 (Brain stimulation)
The 2nd hurdle for POI features: Inventive step

Assessment of technical effect in POI

Assessment of the "how" information is presented:

based on psychological (more subjective) factors

- Showing only **urgent** notifications to minimise **information overload** and **distraction** (Urgency, overload, distraction are based only on psychological factors)

*\(\times\)*

based on physiological (more objective) parameters

- Providing a **3D localized sound** perceived as **emanating** from the position of the displayed object

- Displaying a stream of images wherein the parameters for delay and change are computed based on physical properties of the human visual perception in order to achieve smooth transition

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Art. 56
GL G-II, 3.7(i) first paragraph

T1741/08 (GUI layout SAP)

indirect effect/broken chain: "the layout has an effect on the user, the user responds more quickly, so that the computer uses less resources"
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The 2\textsuperscript{nd} hurdle for POI features: Inventive step

Examples of technical effect in POI 1/3

Difference with respect to prior art:

Displaying several images side-by-side in low resolution and allowing selection and display of an image at higher resolution

\begin{itemize}
  \item Enables efficient search and retrieval of stored images (T 643/00)
\end{itemize}

Art. 56
Does the feature relating to POI contribute to the technical character of the invention? answers?
The 2\textsuperscript{nd} hurdle for POI features: Inventive step

Examples of technical effect in POI 2/3

Difference with respect to prior art:
dialysis system with display of therapy set-up procedure screens requiring operator input and illustrates progress of therapy

credibly assists the user in assessing progress of dialysis by a continued and guided human-machine interaction process (T690/11)
The 2\textsuperscript{nd} hurdle for POI features: Inventive step

Examples of technical effect in POI 3/3

Insulin pump with controller and display interface

Difference with respect to prior art:

The command menu items shown on the display are adapted to the user by previously analysing the previous choices of the user and displaying the menu items ranked by the probability of being chosen.

- Improvement of the ergonomics in combination with a flexible command menu of an insulin pump (T1779/14)

Art. 56
Does the feature relating to POI contribute to the technical character of the invention? answers?
Questions

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The 2\textsuperscript{nd} hurdle for POI features: Inventive step

Graphical user interfaces (GUIs)

As part of human-computer interactions, GUIs comprise

i. features of presenting data (output of data) \(\rightarrow\) POI

ii. receiving input in response

- **Output**, e.g. graphic design of a menu may be largely dictated by the **subjective interests** of a user (\(\rightarrow\) what has been said about POI)

- **Input**, e.g. data entry mechanism is more likely to have a technical character, because input requires compatibility with the predetermined protocol of a machine
The 2\textsuperscript{nd} hurdle for POI features: Inventive step

GUI: user input technical

Enabling user input such as by

- entering text
- making a selection
- submitting a command

normally technical

Art. 56
GL G-II, 3.7.1
The 2\textsuperscript{nd} hurdle for POI features: Inventive step

**GUI: user input non-technical**

- Supporting user input by providing information facilitating only the mental decision-making process of the user
  - Helping user decide what he wants to input

- Actual achievement of the effect depends exclusively on subjective user abilities or preferences
  - More convenient manner of input based on user preferences

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**Art. 56**

GL G-II, 3.7.1

T1073/13 (Presentation of button sequence /Micro)
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Conclusions

How to obtain a patent for inventions comprising presentation of information

Claim features

1st hurdle

Computer Memory

presentation of information

Technical Feature? (in isolation)

YES

NO

2nd hurdle problem solution approach

contributing to Technical Character? (Features producing a technical effect?)

YES

NO

• The claims must contain at least one technical feature
• Ensure that presentation of information steps produces a technical effect by credibly assisting the user in performing a technical task by means of a continued and/or guided human-machine interaction process.
• The resulting subject-matter must not be obvious in view of the prior art
# Questions

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