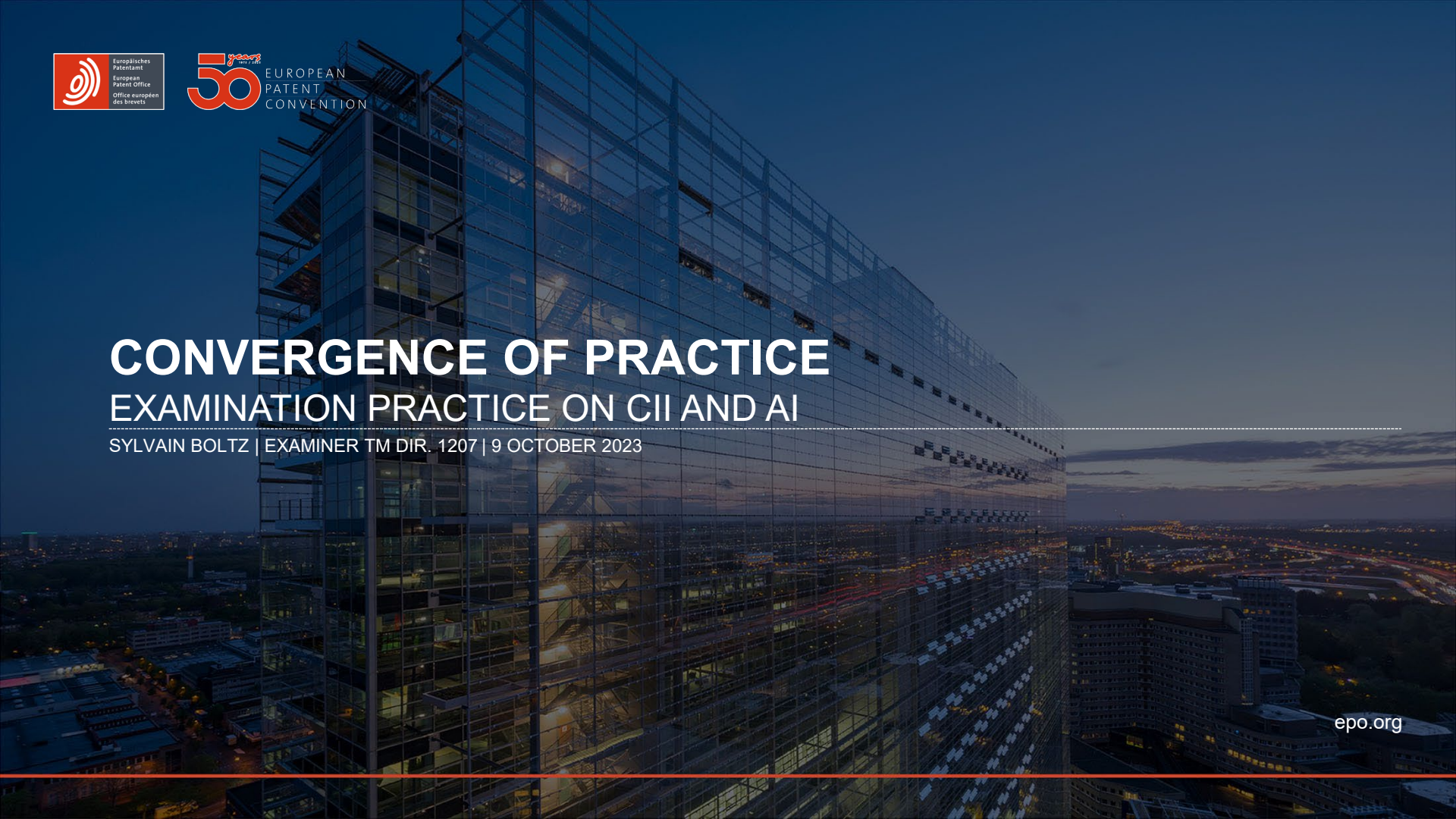


CONVERGENCE OF PRACTICE

EXAMINATION PRACTICE ON CII AND AI

SYLVAIN BOLTZ | EXAMINER TM DIR. 1207 | 9 OCTOBER 2023

COMPOSITION OF WORKING GROUP 6

"Examination of CII and AI"

22 participating contracting states + 1 extension state

AT, BH, BG, CR, CZ, DK, EE, ES, FI, FR, GB, GE, HR, HU, IT,
LV, ME, NL, NO, PL, RO, SM, SE, TR

EPO

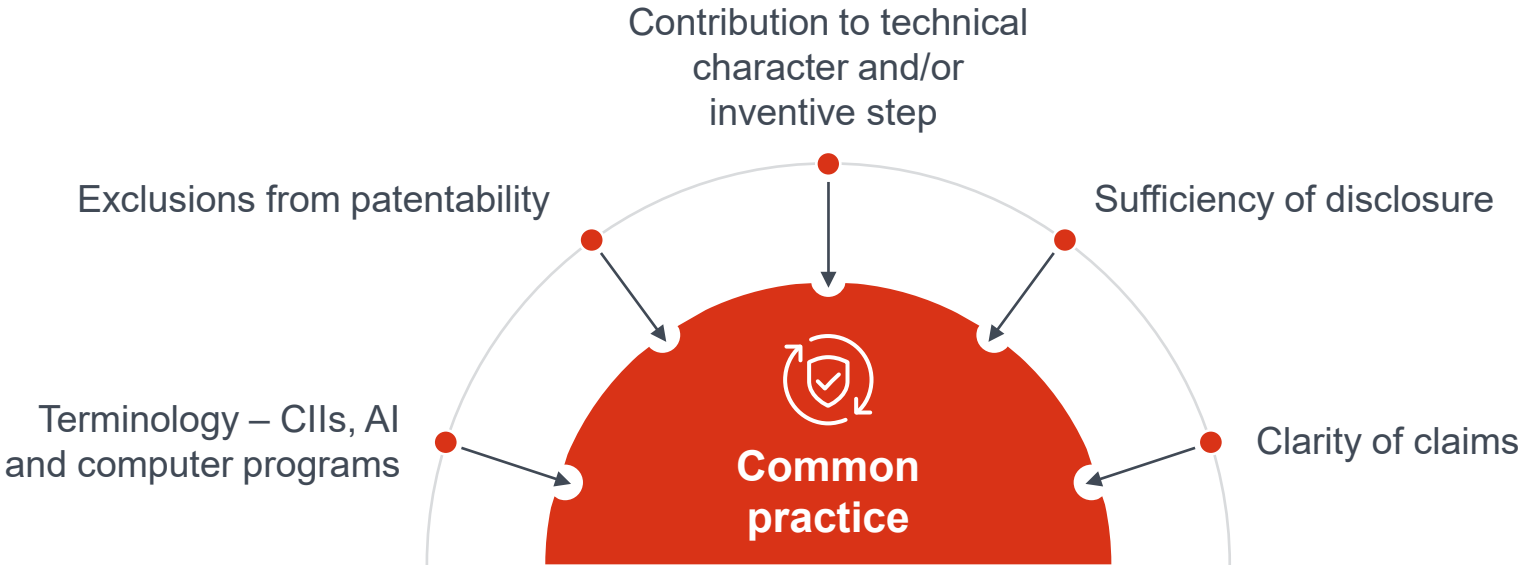
Observers

epi, BusinessEurope

SUMMARY OF WORK OF WORKING GROUP 6

- Questionnaire sent out in February 2022
- Summary of replies was provided in writing
- Working Group 6 held five virtual meetings in 2022
  (18 May, 6 July, 28 September, 23 November and 16 December)
- Recommendation for a common practice adopted on 16 December 2022

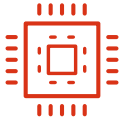
OVERVIEW OF TOPICS ADDRESSED



TERMINOLOGY

- A computer program is a set of instructions executed by programmable hardware.
- A CII is an invention involving at least one feature that is implemented by a computer program.
- AI is intelligence demonstrated by a machine, in particular producing behaviours perceived as intelligent by humans.
- AI includes, for example, machine learning and neural networks the behaviour of which is largely determined by learning from data.

EXCLUSIONS FROM PATENTABILITY



Patent protection is available in all fields of technology, including newly emerging technologies which involve AI

Subject-matter lacking technical character is excluded from patentability

Mathematical methods, when claimed as such, lack technical character

Not excluded from patentability is/are

AI if it provides a technical contribution

Computer programs if they produce a technical effect going beyond the mere implementation of instructions on a computer.

CONTRIBUTION TO TECHNICAL CHARACTER AND/OR INVENTIVE STEP

- CIIs and AI related inventions are mixed-type inventions comprising both technical and non-technical features
- Non-technical features when taken in isolation, are excluded from patentability (e.g. mathematical steps related to AI)
- Offices acknowledge that non-technical features, in the context of an invention as a whole, can contribute to the technical character of the invention and thus support patentability

CONTRIBUTION TO TECHNICAL CHARACTER AND/OR INVENTIVE STEP (CONT'D)

- The contribution to technical character made by mathematical methods employed by AI-related inventions is currently assessed by offices in the same way as the contribution of mathematical methods to CIIs
- Offices may assume that the common general knowledge of the skilled person comprises commonly known AI tools

SUFFICIENCY OF DISCLOSURE

- Offices apply the general sufficiency of disclosure requirements to all inventions, including CIIs and AI-related inventions
- When AI relies on mathematical methods, the mathematical methods must be disclosed in sufficient detail so that the invention can be reproduced by the person skilled in the art.

SUFFICIENCY OF DISCLOSURE (CONT'D)

- Where training datasets are used in machine learning algorithms and contribute to bringing about a technical effect, the characteristics of the training datasets required for reproducing this technical effect may need to be disclosed (or be common general knowledge).
- There is, however, generally no need to disclose specific training datasets, e.g. the ones employed by the inventors.

CLARITY OF CLAIMS

- Offices acknowledge that there is no need for mandatory formulations for "computer program" claims
- The recommended common practice provides guidance on when a computer program claim might lack clarity
  - i.e. when general-purpose computer hardware alone is not enough to execute all the method steps referred to by a claim to a computer program, and the claim fails to recite additional technical means necessary for performing the steps
- The meaning and the technical character of AI-specific terms is assessed by offices in the context of the subject-matter defined in a claim as a whole

BEYOND COMMON PRACTICE

THE EPO approach to CII/AI

TWO-HURDLE APPROACH: "MIXED-TYPE INVENTIONS"

1st hurdle

Art. 52(2) and (3) EPC

- AI and ML computational models and algorithms are "per se" of abstract nature
- Excluded when claimed "as such"
- **Solution: technical means, CII claim forms**

2nd hurdle

Art. 54 and 56 EPC

- All features contributing to the technical character taken into account for assessment of inventive step
- **Do(es) the mathematical method (steps) contribute to the technical character of the Invention?**
- G-VII, 5.4: Claims comprising technical and non-technical features

Patentability of AI and ML

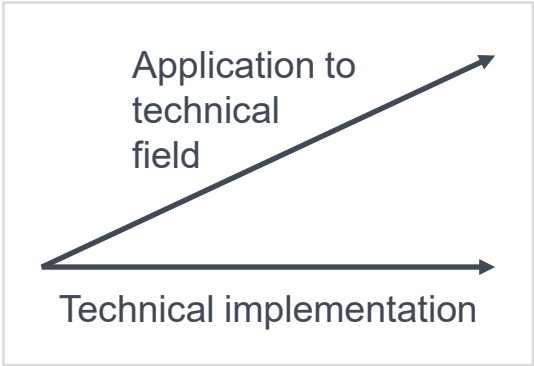
GL G-II 3.5.1, F-IV 3.9.1, G-VII 5.4

INVENTIVE STEP AND THE TWO DIMENSIONS

Do the AI / ML features contribute to the technical character of the invention?

Two independent dimensions:

- by its application to a field of technology
- by being adapted to a specific technical implementation



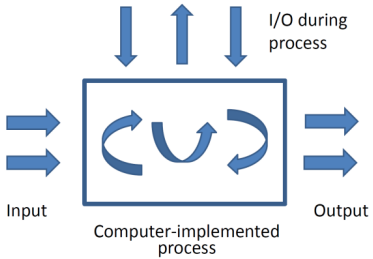
G-II, 3.3

INVENTIVE STEP AND THE TWO DIMENSIONS

Do the AI / ML features contribute to the technical character of the invention?

Technical effects:

- by technical input or output
- by adaptation to the internal functioning of the computer



G1/19 r.85

G-II, 3.3

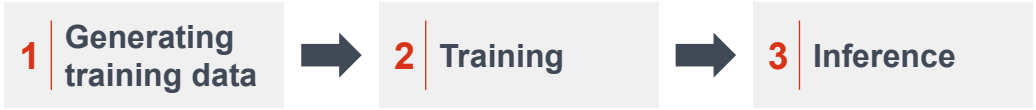
LIMITATION TO A TECHNICAL PURPOSE

Examples of technical purpose G-II 3.3:

- controlling a specific technical system or process, e.g. an X-ray apparatus or a steel cooling process;
- digital audio, image or video enhancement or analysis, e.g. de-noising, detecting persons in a digital image, estimating the quality of a transmitted digital audio signal;
- encrypting/decrypting or signing electronic communications; generating keys in an RSA cryptographic system;

SCOPE OF PROTECTION

- An AI invention typically comprises:



- Where are the essential/differentiating features?
- Where does technicality of those features come from?
  - Technical application (usually in 3, must have an effect on 3)
  - Special technical implementation
- Can we pass inventive step if we claim
  1? 2? 3? 1+2? 2+3? 1+2+3?

G-II, 3.3:

"This can be achieved by establishing a sufficient link between the technical purpose and the mathematical method steps, for example, by specifying how the input and the output of the sequence of mathematical steps relate to the technical purpose so that the mathematical method is causally linked to a technical effect."

THANK YOU FOR YOUR ATTENTION

Sylvain Boltz

Examiner TM Dir. 1207