



Computer-Implemented Inventions in Europe

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Consultant, R.G.C Jenkins
& Co 2013 -



“Technical character” requirement

Basic principle:

To be patentable in Europe, an invention must have a *technical* character

There are two areas of uncertainty:

What does *technical* mean?

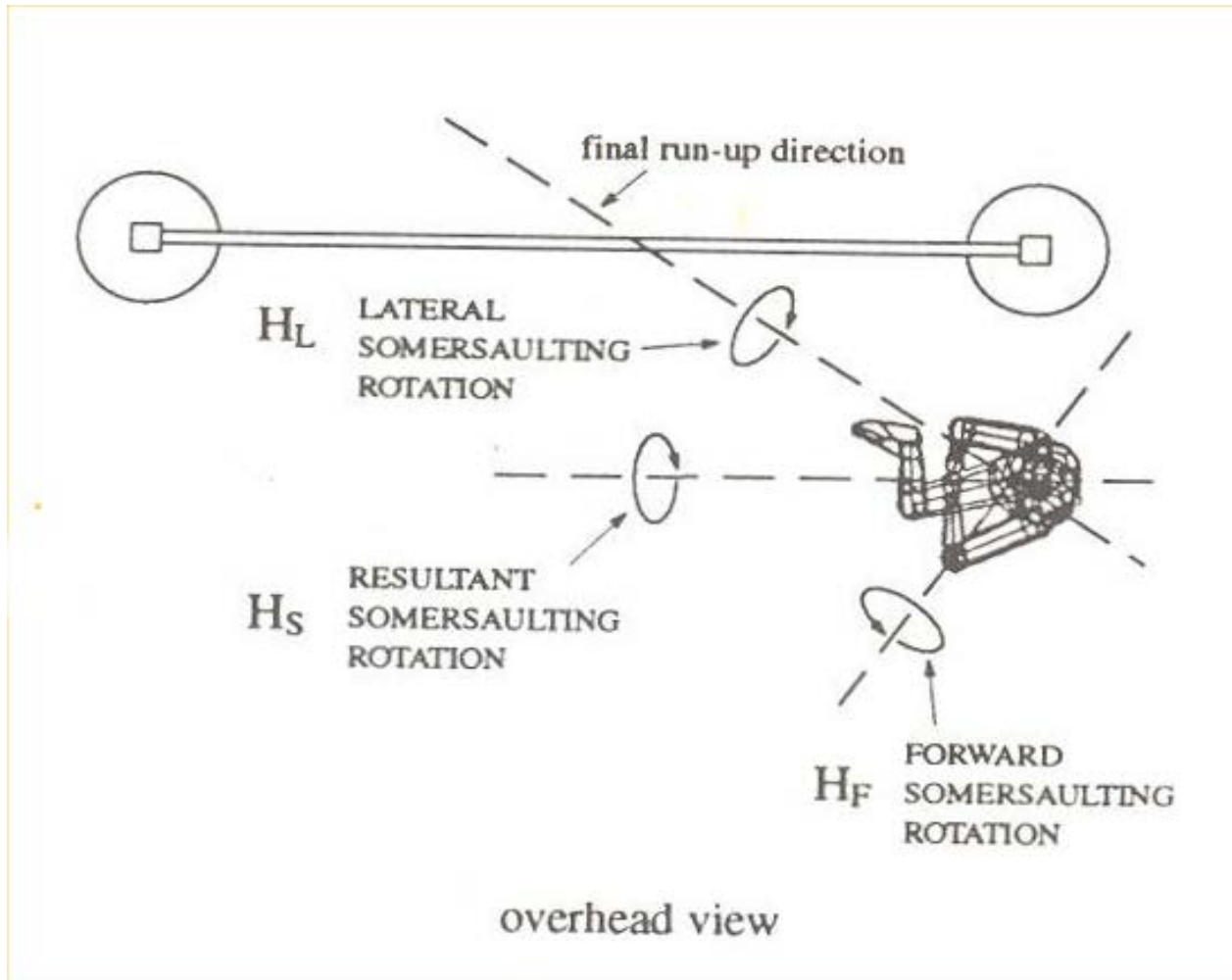
How do we deal with “mixed” inventions?



Is this “technical”?



Are you sure it isn't?



No definition in the European Patent Convention

The following, in particular, shall **not** be regarded as inventions:

- a) discoveries, scientific theories, mathematical methods;
- b) aesthetic creations;
- c) schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers;
- d) presentations of information;

...only to the extent to which a European patent application relates to such subject matter or activities as such.

Articles 52(2) and 52(3) EPC



What the EPC does say

“European patents shall be granted for any inventions, *in all fields of technology...*” *Article 52(1) EPC*

“An Examining Division shall consist of three *technically* qualified examiners” *Article 18(2) EPC*

“The claims shall define the matter for which protection is sought in terms of the *technical features* of the invention...”
Rule 43 (1) EPC

"The description shall ...disclose the invention, as claimed, in such terms that the *technical problem*, even if not expressly stated as such, and its solution can be understood...”
Rule 42 (1)(c) EPC



The EPO's view of “technical”

- exceptions all said to be “non-technical”
- A common mantra: “exceptions to patentability should be interpreted narrowly”
- No general definition in case law
- But “technical” helps concentrate on what *is* an invention rather than what *isn't*
- So: even if not defined in the EPC a requirement of *technical character* has been derived from it



An English view

“One is tempted to say that an Art.52(2) exclusion is like an elephant: you know it when you see it, but you can’t describe it in words”

Jacob LJ (AKA “The Potter Stewart test”)



The German definition

“... application of controllable natural forces to achieve a causal perceivable result, which is the immediate consequence of the controllable natural forces without an intermediate step of the human intellect”

Antiblockiersystem: GRUR 1980, 802

Rote Taube: GRUR 1969, 692



An important early EPO case: T 208/84 VICOM - Digitally processing images

“A method of digitally processing images in the form of a two-dimensional data array having elements arranged in rows and columns the method includes repeated cycles of sequentially scanning the entire data array with a small generating kernel operator matrix to generate a convolved array...”



VICOM: T 208/84 (2)

Original claim:

“A method of digitally filtering a data array...”

Claim accepted by Board of Appeal:

“A method of digitally processing images...”

US claim:

“A method of convolving a data array...”



VICOM: T 208/84 (3)

a claim directed to a *technical* process

- if carried out under the control of a program
- whether implemented in hardware or software

is capable of *industrial application*

is not a *computer program as such*

is not merely a “computer of known type”

- *Technical contribution* decisive
- *Technical character* test

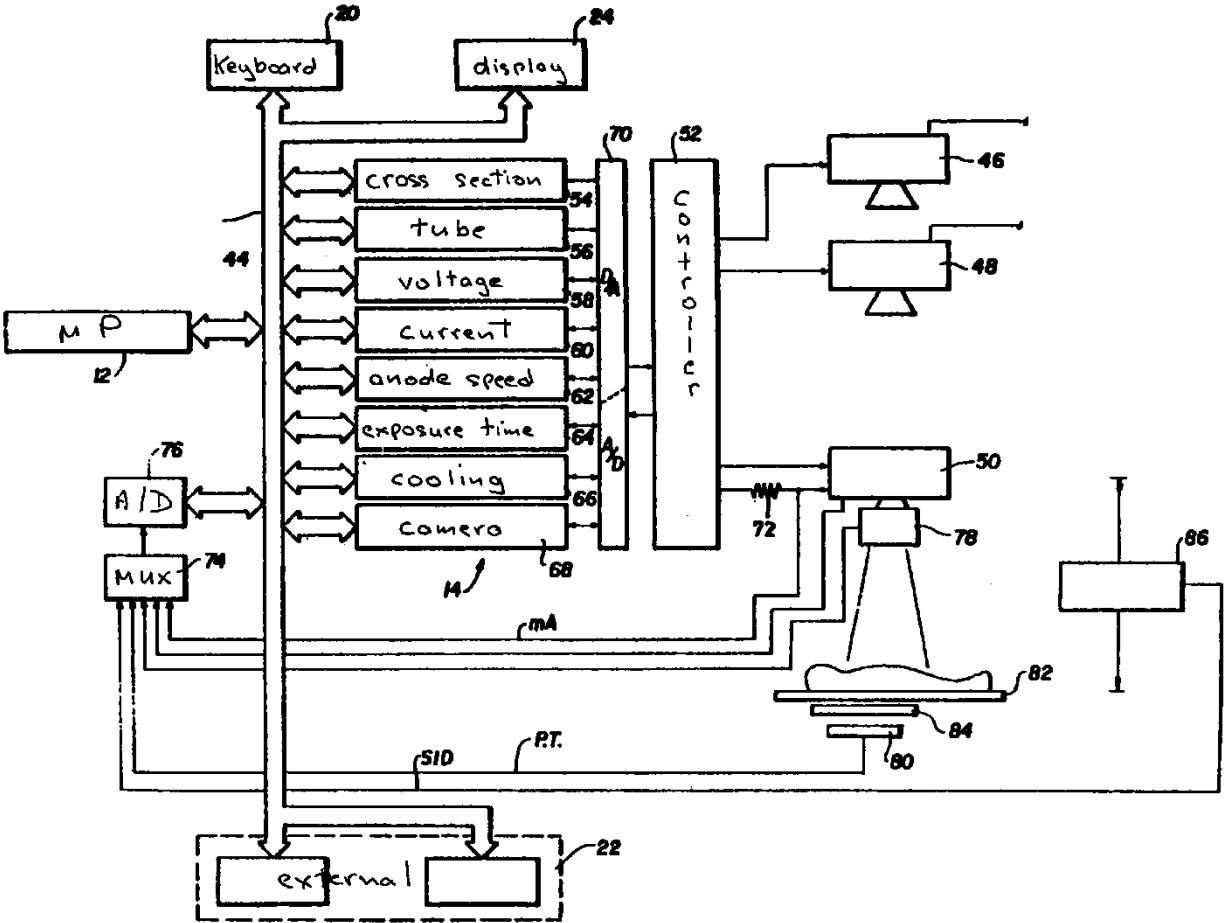


So: what does “technical” *really* mean?

- Implies practical rather than intellectual activity
- Useful in the days of steam engines, but now?
- Immovably established in BoA case-law
- Deep analysis and case-law often do not help
- Good example: T 1670/07 (Shopping with a cellphone) – the Board just didn’t like it
- Or putting it another way, it didn’t have the right “Stallgeruch”



Koch & Sterzel T 26/86 (1)



Koch & Sterzel T 26/86 (2)

- Opposition case
- NOT board 3.5.1
- Known X-ray machine + PC
- PC ensured safe parameters maintained
- Apparatus produces a *technical effect*
- Irrelevant when this happens (i.e. there can be a *potential* technical effect)
- Invention must be assessed as a whole



Koch & Sterzel T 26/86 (3)

- Really a “mixed” invention
- What about inventive step?
- Seems to have been overlooked!
- See EPO Guidelines G-VII, 5.4



Mixtures of technical and non-technical features

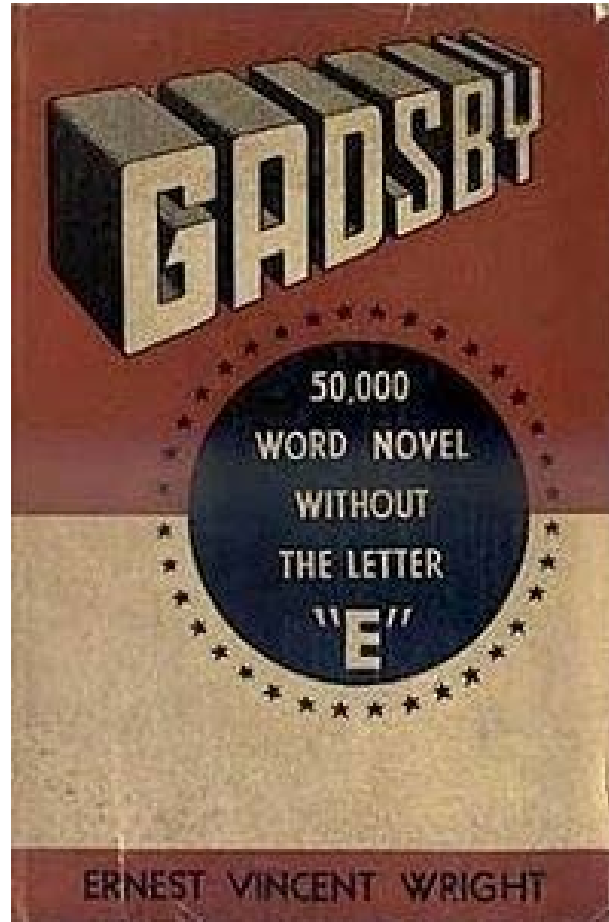
The usual issue in computer-implemented inventions

- If there is any technical content, it is not excluded by Art. 52(2) and Article 56 comes into play – the “Comvik” approach
- Non-technical features can contribute to a technical effect (e.g. mathematical algorithms embodied in computer programs, T208/84 cited above)
- For a computer program it is not sufficient to point to what happens when any program runs. There must be something more (“further technical effect” – T1173/97).



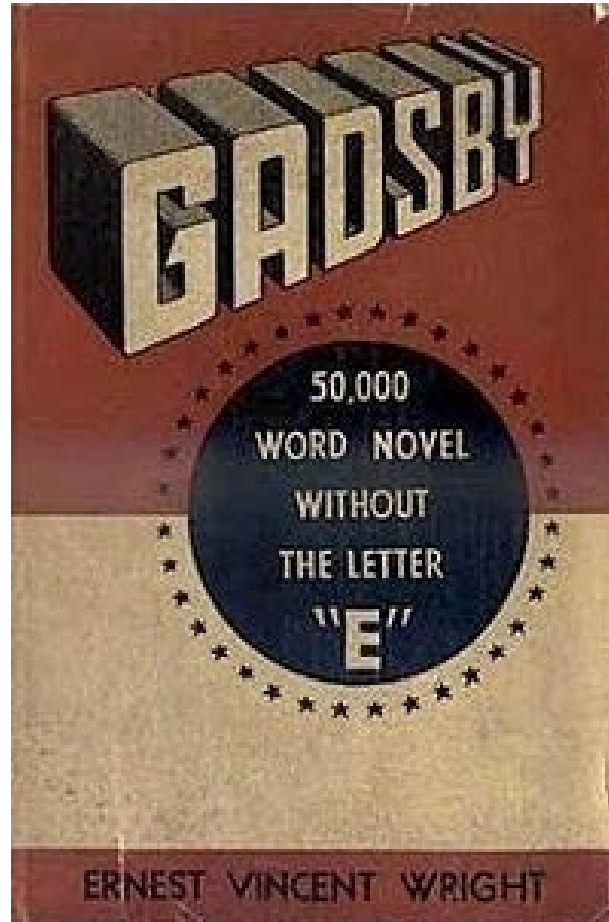
A straightforward case – no technical features

“A novel, written in English, characterised in that it does not use the letter “e”



A slightly trickier case – no inventive features

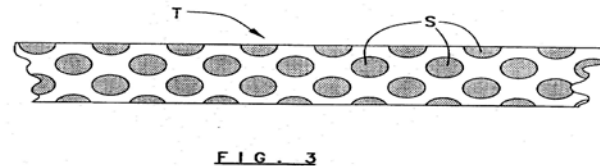
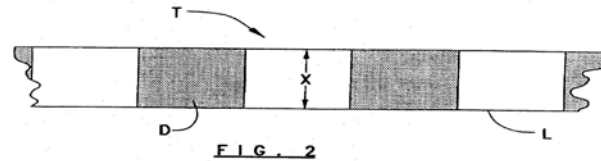
“A printed book, written in English, characterised in that it does not use the letter “e”



An example from mechanics: Electric fencing element: T 1121/02

WO 97/28332

PCT/NZ97/00011



“An elongate electric fencing element [having] along its surface contrasting markings which are a deterrent to an animal ...such as to resemble the warning pattern of another animal ...”

“The contrasting markings ...do not contribute to the solution of any technical problem by providing a technical effect and therefore have no significance when assessing inventive step”



T 641/00 Comvik/Two Identities (1)

“Method in a [GSM] telephone system ...in which subscriber units are controlled by a SIM, *characterized in that* the SIM is allocated at least two identities, ... said at least two identities being selectively usable, wherein only one identity can be activated at a time, ...wherein the selective activation is used for distributing the costs for service and private calls or among different users”.



T 641/00 Comvik/Two Identities (2)

- Inventive step needs *technical* features
- *State of the art* = *state of technology*
- Usefulness of *problem and solution* approach
- The problem must be a *technical* problem
- Charging costs in a mobile phone system does not contribute to technical character



T 1173/97 IBM/Computer program product (1)

“A computer program product is not excluded from patentability under Article 52(2) and (3) EPC if, when it is run on a computer, it produces a *further technical effect which goes beyond the "normal" physical interactions between program (software) and computer (hardware)*”.

Further technical effect: resource recovery if a commit procedure for initializing an application fails

Similar case is T 935/97: *further technical effect* is processing info for display so that overlapping windows can each still be read



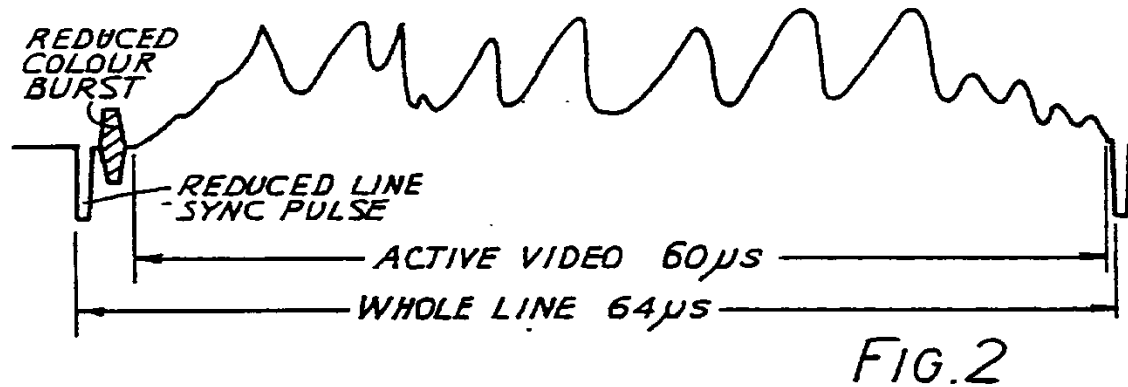
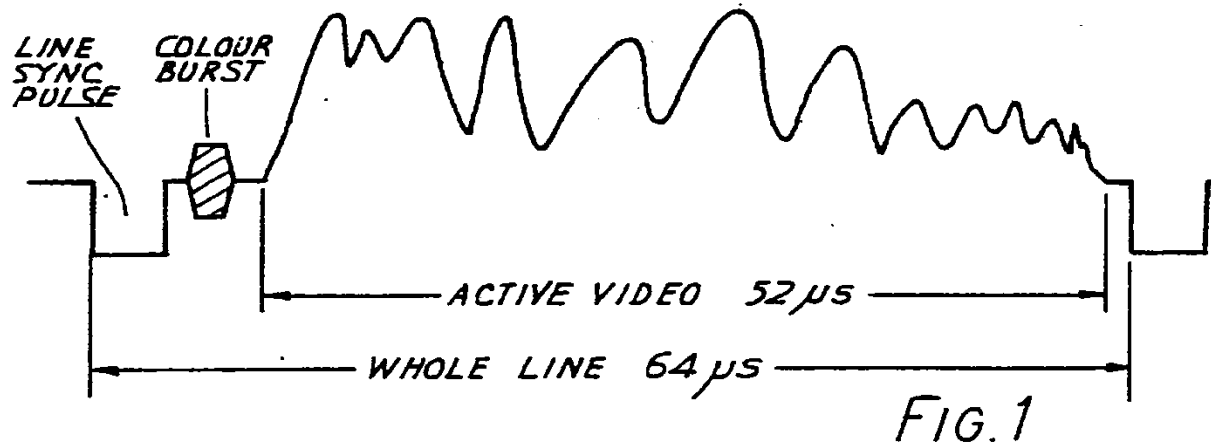
T 1173/97 IBM/Computer program product (2)

Note the form of claims allowed:-

- A computer program product directly loadable into the internal memory of a digital computer, comprising software code portions for performing the steps of...
- A computer program product stored on a computer usable medium...



A special case: T 163/85 BBC/Colour TV Signals



T 163/85 BBC/Colour TV Signals

“A colour television signal adapted to generate a picture with an aspect ratio of greater than 4 : 3, and in which the active-video portion of a line constitutes at least 85% and preferably 90% of the line period.”



Inventive Step: The problem-solution approach

1. Determine the closest prior art (CPA)
2. Establish the difference between the invention and the CPA in terms of *technical* features and determine the *objective technical problem* to be solved
3. Is there an indication in the prior art that would prompt the skilled person to solve the *objective technical problem* by modifying or adapting the closest prior art to arrive at the claimed invention?

c.f. EPO Guidelines G-VII, 5



Some fields with mixed inventions

- Programming
- Games
- User interfaces
- Digital rights management
- System modelling / simulation
- Logistics



Programming

- T0354/07 Defining the structure of a generic software system is not technical, even if specified for an industrial system, unless there is a direct connection with a technical effect solving a technical problem
- T0160/09 designing a software system in “layers”, with rules on communication between layers; no technical problem solved over the closest prior art
- T1539/09 a programming language and visual programming environment; programming is a mental act, so defining a (generic) programming language does not have a technical effect (not inventive)
- T1784/06 a faster algorithm is not a further technical effect



Games (video games, gambling machines etc.)

- T1543/06, Board 3.2.04 Same methodology endorsed for gambling machines; good analysis of mixed inventions
- T0336/07, Board 3.2.04 Game rules are an “abstract, mental construct”; their implementation requires a “further technical effect” for there to be an inventive step (T1173/97, slides 14 and 15)
- But what effects are technical ?
 - T0717/05, Board 3.4.03 Displaying the state of the game and thus maintaining the player’s interest is technical; but:
 - T0042/10 and T1281/10, Board 3.5.01 (related cases)
No it isn’t !



User interfaces, presentation of information

- **“Lowering cognitive burden” a technical effect ?**
 - T0049/04, board 3.4.03 (automatically laying out text in “more readable” form) - **yes**; T1023/06, T0336/07, T1793/07, all board 3.2.04 (games) - **yes**
 - T1143/06, T1235/07, T1575/07, all 3.5.01, and T1741/08, board 3.5.06 - **no**
 - Psychological or physiological effects: T1749/06-3.4.03 (3D icon effect - technical), T1741/08-3.5.06 (lowering cognitive burden not a technical effect), T0862/10-3.5.06 (where to put an object (its "urgency") not a further technical effect.)
- **New visual ways of presenting information not technical**
 - T0125/04, T0740/05, T1567/05, T1143/06



Cryptography, Digital Rights Management, Modelling

Cryptography

- T1326/06 New, more efficient, method of generating keys in encryption/decryption is a technical contribution, even if the innovation lies in mathematics

DRM

- T1402/06, T0754/09 Meeting legal requirements does not contribute to inventive step;

Modelling/Simulations

- generally non-technical, even if modelled system technical, if model not tied to specific technical features : T0930/05, T1073/06, T1171/06



Logistics

- T0912/05 mail delivery is non-technical
- T0696/06 brokering offers and demands for transport of travellers or goods is non-technical
- T1670/07 generating a shopping itinerary is non-technical
- T1265/09 determining schedule for operators in a call centre not technical (but many patents have been granted in this field!)



Open questions

- Interface between mathematics and engineering
 - Algorithms (which improve speed or efficiency)
 - pseudorandom sequences (cellular networks)
- Features which can be technical or non-technical (T 930/05 – “could be” technical not good enough)
- GUIs – difference between psychological and physiological responses?
- Use by examiners of "notorious" prior art (T 313/10)





Any Questions?

Thank you for your attention!