

PT QA *system* Intellectual
Property and
commercialisation

Patentable Subject Matter

Reference: WIPO Intellectual Property Handbook

<http://www.wipo.int/about-ip/en/iprm/>

- Excluded from patentability:
 - scientific theories or mathematical methods
 - methods of treatment for humans, or diagnostic methods practiced on humans (but not products for use in such methods)

Conditions of patentability

- An invention must meet several criteria if it is to be eligible for patent protection.
 - the invention must be **industrially applicable (useful)**,
 - it **must be new (novel)**,
 - it must exhibit a **sufficient “inventive step” (be non-obvious)**,
 - the **disclosure of the invention in the patent application** must meet certain standards.

Industrial Applicability - Utility

- invention applied for practical purposes with the possibility of making and manufacturing in practice

No objections for our Range Calorimeter/Telescope, in my opinion

Novelty

- Undisputed condition of patentability
- **An invention is new if it is not anticipated by the prior art**
 - prior art is all the knowledge that existed **prior to the relevant filing or priority date** of a patent application, whether it existed by way of written or oral disclosure
- The **disclosure of an invention** so that it becomes part of the prior art may take place:
 - by a description of the invention **in a published writing**
 - by a description of the invention **in spoken words** uttered in public (oral disclosure)
 - by the **use of the invention in public**

Oral disclosure ?


Google


laurent kelleter scintillator

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Videos

 PART on Twitter: "Thank you to PhD student Laurent Kelleter @UCLHEP presentin... Twitter - 4 May 2018

 Andrew Gosling on Twitter: "Laurent Kelleter showing a scintillator range telescope for #protont... Twitter - 26 Jun 2018

[Laurent Kelleter - Optimization of Medical Accelerators Project ...](https://www.liverpool.ac.uk/oma-project/network-structure/fellows/laurent_kelleter/)
https://www.liverpool.ac.uk/oma-project/network-structure/fellows/laurent_kelleter/ ▾
Laurent obtained a Bachelor's degree in physics in 2013 from RWTH Aachen University. He graduated with a work on the set-up of a SiPM-based scintillation ...
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Proton Calorimetry for Range Quality Assurance

Simon Jolly, Ruben Saakyan,
Anastasia Freshville, Laurent Kelleter

Googling: Simon Jolly scintillator

- http://www.pprig.co.uk/pprig/meetings/docs/20161201-02_pprig_workshop/6-jolly.pdf
- <https://stfc.ukri.org/files/accelerators-in-the-uk-proton-therapy-centres/>
- https://indico.cern.ch/event/654712/contributions/2666034/attachments/1531773/2397743/SJ_STFCDetectors_ProCal_25-09-17.pdf

Novelty

- A document will only destroy the novelty if the patent subject matter is explicitly contained in the document
- **Lack of novelty if the publication by itself contains all the characteristics of the patent claims**

**I'm worried about oral disclosure.
Need to investigate with experts if the novelty
condition is addressed**

Inventive Step

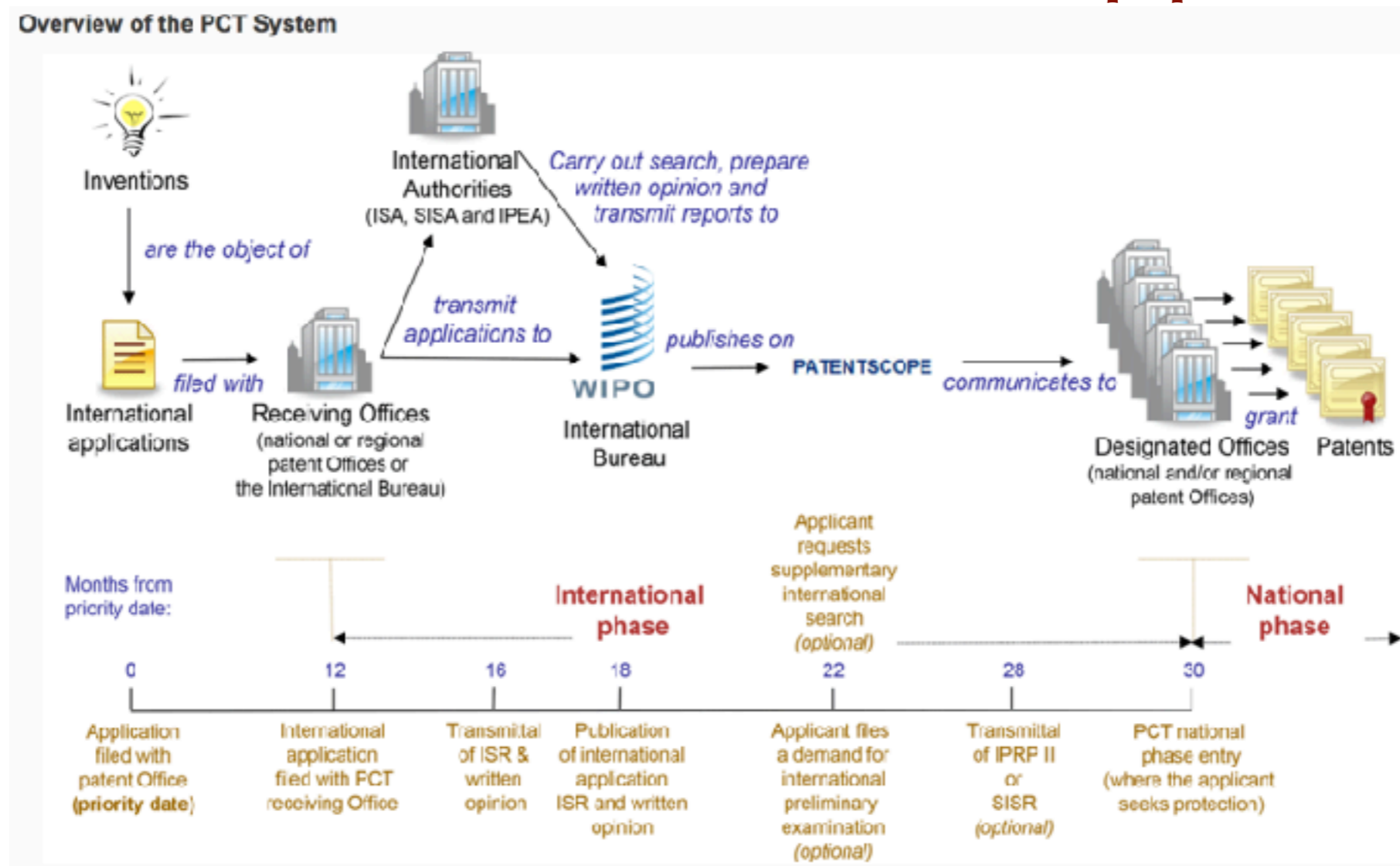
- **Whether or not the invention would have been obvious to a person having ordinary skill in the art**
- “inventive step” conveys the idea that it is not enough that the claimed invention is different from the state of the art (new) but that:
 - it must be inventive, **result of a creative idea**
 - there must be a clearly identifiable difference between the state of the art and the claimed invention (**advance or progress**)

Inventive Step in our case

- Range extracted from the quenched light output of the scintillator using the analysis described in Bortfeld paper
 - same hypot. and analysis, but applied in terms of the scintillator intensity (not dE/dx)
- Dose deposition as a function of depth from a stack of scintillator sheets
- State of the art
 - monolithic block of plastic scintillator
 - liquid scintillators
 - proton range radiography of the TERA foundation using sheets of plastic scintillators

I need to learn more about other detectors and the current state of the art

Examination of a Patent Application



- The application is checked to accord a filing date
- The filing date determines the **priority date** and is **relevant to the evaluation of novelty and inventive step**

We don't need to wait the patent to be granted to publish
According a filing date can take several months / 1 year