

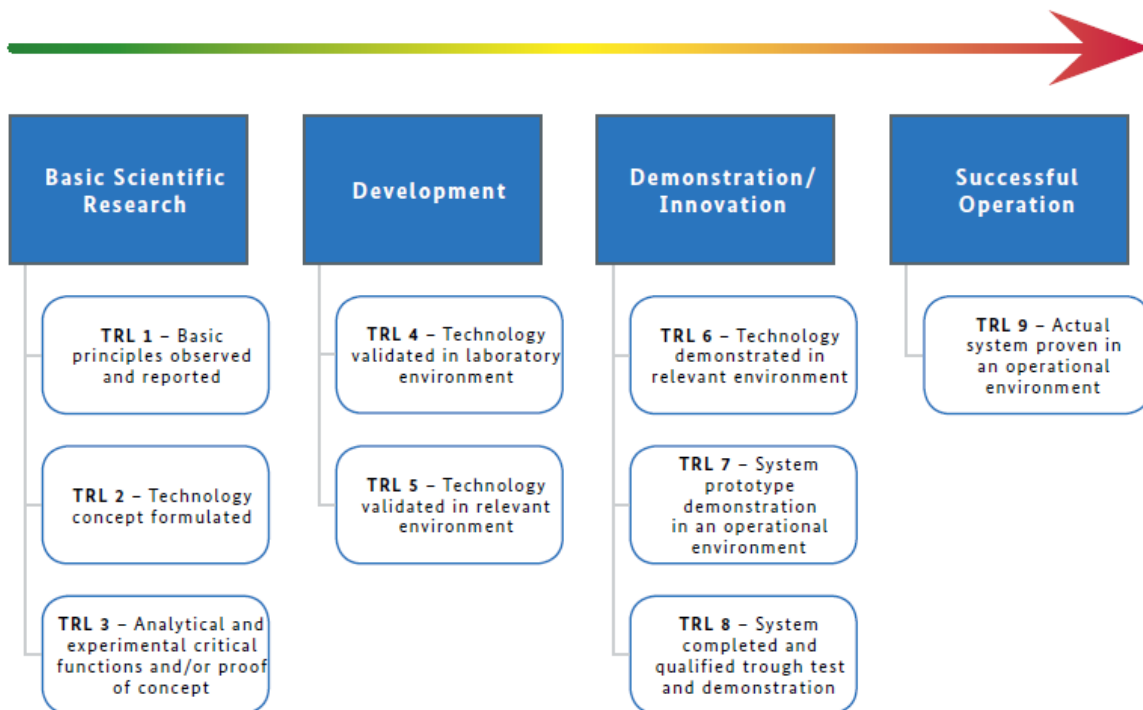
## Basic Scientific Research or applied Research? The Delimitation from the Perspective of Export Control

The various export control laws define the term **basic scientific research** as «experimental or theoretical work undertaken principally to acquire new knowledge of the fundamental principles of phenomena or observable facts, not primarily directed towards a specific practical aim or objective». This **definition** is equivalent to the general understanding of science stating that **basic scientific research is purely knowledge-oriented or knowledge-driven research** and is related to fundamental questions and problems of a discipline.

### *But, where does basic scientific research stop and where does applied research start?*

The originally developed **Technology Readiness Level (TRL)** by NASA offers an appropriate assistance to the demarcation question. The scale to evaluate the development status of new technologies is based on systematic analysis. The TRL has become the standard for the assessment of future technology. The higher a technology can be classified in the development stage, the more attention must be paid to export control.

### Scale Technology Readiness Level (TRL)



Source: BAFA Export Control and Academia Manual, February 2019

**The following outline provides further guidance:**

Indicators for the assessment of the type of research	
Basic Scientific Research	Applied Research
<ul style="list-style-type: none"> <li>• Oriented towards new and fundamental insights into principles and phenomena</li> </ul>	<ul style="list-style-type: none"> <li>• Oriented towards specific processes and products through to market maturity</li> </ul>
<ul style="list-style-type: none"> <li>• No focus on a practical purpose</li> </ul>	<ul style="list-style-type: none"> <li>• Focus at the funding</li> </ul>
<ul style="list-style-type: none"> <li>• typically <i>Technology Readiness Level (TRL)</i> 1 to 3</li> </ul>	<ul style="list-style-type: none"> <li>• typically TRL greater than 3</li> </ul>
<ul style="list-style-type: none"> <li>• no outside funding from industry</li> </ul>	<ul style="list-style-type: none"> <li>• outside funding from industry</li> </ul>

Source: BAFA Export Control and Academia Manual, February 2019

**Note on Research Co-operations with industrial partners**

Technology provided by Industrial Partners

If ETH Zurich enters into research co-operations with industrial partners, it is usually no longer basic research, but application-oriented research. In these cases, information also must be requested from the industrial partner involved as to whether the technology provided by the industrial partner is export controlled. Every exporting company must have implemented an export control program in its business processes and should be able to fulfil this requirement.

Technology Development for Industrial Partners

The technology developed for a research cooperation also must be subjected to an export control assessment if the research partner is located abroad or if it is known that the technology will leave the country via the Swiss industrial partner. If the contract also provides that the technology developed for the industrial partner is to be licensed to an organization affiliated with the Ministry of Defense, an export control assessment is mandatory.