



# Additional notes

## Completing the *Zivilklausel* checklist

Further to the Senate meeting of November 5<sup>th</sup> 2014

Referat ID  
Gremienorganisation

Geschäftsstelle der  
Ethikkommission

### Preliminary note

The purpose of the checklist is not to find reasons for exclusion which would disqualify a research proposal. Rather, it is designed to uncover *indicators* – pointers to *potential* problems. If your research proposal seems to have implications for the *Zivilklausel* (e.g. is a borderline case), you can respond by submitting a separate statement which can be included in the project dossier undergoing the normal administrative process in Department VI. Alternatively, you can consult the Ethics Commission. For this purpose, you should forward the application/contract to the Ethics Commission for consultation and/or approval.

TU Darmstadt's *Zivilklausel* comprises two steps. It asks about general “goals” (peaceful/peacekeeping or military) associated with the use of research and about concrete “purposes” (civilian or military) to which the specific research results (e.g. technical solutions, usage scenarios) are tailored or optimised. The issue of optimisations is interesting because in the case of dual use (solutions of civilian as well as military use) the likelihood of non-civilian use can be minimised. Apart from this, in some cases, research for military purposes can serve peaceful/peacekeeping goals and is then compatible with the *Zivilklausel*.

Please think beyond the general goals of your research and consider the “purposes” that have been concretely implemented as well as the context of contracts/commissions.

### On question 1 – Does the research proposal refer exclusively to pure research?

In the context of pure research a direct link to identifiable goals and purposes is not usually obvious. In most cases, pure research is indeed not of relevance to the *Zivilklausel*. Potential opportunities for such goals and purposes can, however, emerge from the field of investigation or the orbit of the contracting entity. If your research proposal exclusively refers to pure research, proceed to *Question 5*.

### On question 2 – Is the research proposal governed by peaceful objectives\*?

(\* i.e. the maintenance, use and exploitation of non-violent means for settling potential conflicts are not compromised; there is no danger of usage in support of personal or structural force)

This question refers to application-related research or directly applied research. In this context, the *goals* (of later use/application) and *purposes* (that will be implemented in a technical solution) are identifiable. In terms of goals, much application-related research (such as distance reconnaissance or pattern recognition) falls into the category known as dual use: both peaceful and military use is conceivable.

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In order to recognise (or conceivably guarantee) peaceful objectives, planned application scenarios or concrete optimisation purposes linked with the research can offer guidance. And vice versa: application scenarios and optimisation purposes can also indicate non-peaceful objectives.

*Example referring to the question: What is the role of purpose in the question about goals?* Applied research serves a direct purpose to which optimisation efforts are geared, e.g. armouring fighting robots, developing (problematic) algorithms to distinguish between combatants and the civilian population in the use of combat drones, landmines (already internationally outlawed), optimising a laser procedure originally developed for medical purposes for the United States' SDI ("Star Wars") programme.

*Example of research whereby the result might compromise the non-violent regulation of potential conflicts:* combat drones making it impossible for ad-hoc communication between combatants to take place.

*Example of research which entails the risk of usage for personal or structural force;* strategies developed for psychological warfare serving to implement personal or "structural" force (by which entire groups of the population/community may be terrorised).

### **On question 3 – Does the project exclusively serve civilian purposes (this also includes civilian use of force by law and order agencies)?**

This question refers to research projects that are conceived as application-related or applied but quite clearly serve civilian purposes: this is a "just checking" question.

*Examples of unequivocally (only) civilian research purposes:* groundwater balance, energy efficiency in production and for civilian infrastructures, Goethe's love poetry, automotive engineering for passenger cars, contactless gearboxes, etc.

### **On question 4 – If military purposes are pursued, advantaged or not ruled out in the context of application-related optimisations (dual use): Are these purposes other than those in the interests of protection, supply, intelligence/surveillance or immediate defence?**

This question looks at research proposals/technologies that whilst not excluding military purposes, in the context of peaceful/peacemaking missions are still acceptable research proposals in terms of the *Zivilklausel*.

"Purpose of protection" – this refers, for example, to kitting out soldiers on UN deployments (Blue Helmets). It could relate to distinguishing between combatants, preventing losses in the civilian population etc.

In this context, "supply" refers to the maintenance and development of (civilian) infrastructures with military aid; "intelligence" is restricted to identifying threat potential; "immediate defence" is restricted to weaponry of the kind that is indispensable for purposes such as arming police; it refers to emergency defence and emergency aid for individuals.

*Example of overstressing the term protection:* "protective purposes" do not include deployment under the so-called "responsibility to protect" (that is, interstate intervention that is in essence potentially belligerent).

### **On question 5 – Is the project set up so that optimisation options/application scenarios are geared to peaceful objectives?**

As already touched on in the preliminary note, ensuring peaceful goals (in implementing research results) is dependent on the concrete *purposes* associated with optimising these research results – that is, the usability, for example, of technical solutions, scientific products or social scientific expertise.

*Example for a field of investigation in which assessment is strongly dependent on its specific optimisation (currently under discussion by the German Ethics Council):* synthetic biology involving bacteria and viruses. Depending on the choice of object of investigation (e.g. intestinal bacteria or pathogens producing epidemics), in certain cases, application options envisaging therapeutic purposes ("repair") or the development of biological weapons can be identified or not excluded.

*Example of a close connection between pure research and optimisation:* (simulation-based) flow research is considered pure research when, for instance, the simulation itself is being optimised (validated and verified);

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problems may present themselves if the development stretches to optimising wing panels coated with camouflage paint.

*Example of optimisation with – clearly – peaceful intent:* flexible, mobile solar modules are used in different ways in crisis areas, both in civilian and military contexts. One example of renouncing additional military optimisation would be to technically preclude the camouflage of solar carpets, making them unusable for military deployment.

*Example of precluding optimisation:* lightweight rescue robots which can be developed so that they cannot be armoured and are thus only suitable for peaceful, civilian use.

How relevant the *Zivilklausel* is depends on the *context* of the contract, so please think beyond the original, peaceful goal (development aid, rescue) and consider concrete application scenarios.

**On question 6 – Is the contracting entity a military or military-related institution, or a company or an arms-related area of business within a more broadly-based company in the field of defence technology?**

This question aims to uncover *indicators* which make it essential to answer question 7. It does not serve to prove a criterion for exclusion.

*Example of exclusively pure research whereby the contractual entity is of potential relevance to the Zivilklausel:* mathematical number theory is considered pure research; problems may present themselves if a research project in this field is financed by a ministry of defence. In this case, the purpose of research would be military.

Information on the proportion of armaments in a company's production can be found on the website of a famous peace and conflict research institute: <https://www.sipri.org/databases/armsindustry>

**On question 7 – Is there a risk of incipient structural dependence (financial, higher education policy-related) on the relevant research funding that could compromise the scope not to comply with wishes expressed by the contracting entity, which are of relevance to the *Zivilklausel*?**

This question refers to the basic problem of research for a military contracting entity: the potential emergence of dependencies to which the research funding system, for example, in Great Britain and the United States is prone.

Apart from the risk of *financial* dependence, dependence can occur when the opportunities to influence the use of the results (achieved at the university) beyond those of the original purpose, which was decisive for the scientific contractor, are lost. The risk of placing oneself in a position of dependence on the contracting entity's management strategies, which make use of intermediaries (spin-offs abroad etc.) or relevant collaborations, needs to be examined (the German company *Heckler & Koch* is a possible example of the need to consider a danger of this kind).

**On question 8 – Could the publishing of research results be delayed, completely or partially prohibited, or subject to certain conditions for reasons of military secrecy?**

This question refers to restrictions on the freedom of research and teaching by military economic interests. In this case, it is relevant to distinguish between research findings and industrial secrets. The need for military secrecy with regard to research findings is a clear indicator that there is not only a problem of dual use, but that a threshold has been overstepped in the direction of unambiguously military use (and military goals?).