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WORKING DOCUMENT ON CRITERIA AND LISTS OF AGENTS
TO BE INCLUDED IN A VERIFICATION PROTOCOL OF THE CONVENTION ON THE
PROHIBITION OF BIOLOGICAL WEAPONS

Working Paper submitted by France/Germany

Introduction

States parties accepting the obligations resulting from a verification protocol should know, without ambiguities, which agents enter under the scope of verification. A list of potentially militarizable agents is a tool aimed at enhancing the credibility of a verification regime by facilitating the implementation of specific measures. These measures will be applicable to agents fulfilling a precise set of criteria (described in Part I and II below) and/or included in the list of agents (Part III).

The objectives of this document therefore are:

- 1) to specify which are the criteria of militarization (or of “military interest”) for an agent. For inclusion in the protocol it is important for these criteria to be stable and undisputed.
- 2) to specify when an agent should be inscribed on the list of militarizable pathogen agents.
- 3) to establish a list of human pathogen agents to be included in a verification protocol.

I. Which are the militarization criteria for an agent?

Besides the toxic or lethal nature, other criteria must be considered in order to judge the “military interest” of an agent. These are:

- 1) Direct contagiousness,
- 2) Minimal infecting dose or toxicity level,
- 3) Route of the infection or intoxication,
- 4) Duration of incubation or that of the appearance of the first symptoms,

- 5) Survival in the environment,
- 6) Ease of production; ease of stockpiling and stability of stockpiled products,
- 7) Existence of prophylaxis and/or a therapy,
- 8) Difficulty to detect it in the environment,
- 9) Psychological repercussion of any alleged use or threat of use.

There is no point in measuring the “military interest” (or risk) represented by an agent by considering each of these criteria separately. Only their combination can allow this evaluation.

II. When an agent should be inscribed on the list of militarizable pathogen agents?

The criteria that an agent must fulfill to be of “military interest” are those described above. To inscribe an agent on the list of agents, we still must demonstrate that it has been, it is or could be in the future used for military purpose (or be militarizable). When shall we inscribe an agent on the list?

Most pathogen agents of “military interest” belong to groups III and IV of the World Health Organization nomenclature. A classification into two distinct lists of potentially militarizable agents seems the most appropriate as it draws a distinction between living agents on the one hand and molecular agents on the other hand, for which the militarization criteria differ.

1) Is included on list 1 “any pathogenic agent of groups III and IV as defined by the WHO”

* if it has already been proved, or if there are strong presumptions that it may have been produced, stockpiled, loaded into weapons systems or used for military purposes (biological weapons),

* if it is established, with respect to the criteria announced above, that its development in the framework of permissible activities may represent a major risk if these activities were diverted from their object.

Special attention will be paid in this connection to:

i) the microorganisms of groups III or IV selected for their resistance capacities to antibiotics, antiseptics and other pharmacologically active substances,

ii) the recombined microorganisms with pathogenicity or virulence factors notably if the donor organism is from group III or IV,

iii) any organism genetically modified with sequences coding toxins or bioregulating peptides having for effect either to increase its resistance against environmental

and antibiotic influence or increase its virulence (due to uptake of virulence gens/phages for the production of toxins included on the list no.2 below).

2) Is included on list 2 “any biologically active molecular agent”

* if it has already been proved, or if there are strong presumptions that it may have been produced, stockpiled, loaded into weapons systems or used for military purposes (biological weapons),

* if it is established, with respect to the criteria announced above, that its development in the framework of permissible activities may represent a major risk if these activities were diverted from their object.

Special attention in both cases will be paid to:

- i) the existence of large scale production processes for industrial activities, either using natural organisms, genetically modified organisms or chemical synthesis,
- ii) if the obtained product possesses an active structure identic or similar to that of a product already appearing on the list, or can be used to obtain one of these, and if this active structure products the same toxic effects.

III. List of human pathogen agents

This list does not reduce nor alter in any way the scope of the Article I of the Convention neither constitutes a definition of the term “biological weapon”.

This list includes, regardless of their origin and mode of production, the following biological agents fulfilling by their very nature the criteria described in paragraphs I and II above.

List 1: “Living agents”	List 2: “Molecular agents”
<ul style="list-style-type: none"> - Bacillus anthracis - Brucella spp. - Francisella tularensis - Yersinia pestis - Haemorrhagic fever viruses: <ul style="list-style-type: none"> · Crimean-Congo virus · Ebola virus · Hantaan virus · Junin virus · Lassa virus · Machupo virus · Marburg virus · Yellow fever virus 	<ul style="list-style-type: none"> - Clostridial toxins (Clostridium botulinum A B E F; Clostridium perfringens Toxin A, C) - Ricin - Staphylococcal toxins (enterotoxins A B C D E) - Shigatoxin - Algal toxins: <ul style="list-style-type: none"> · Saxitoxin (paralytic shellfish poisoning) · Neosaxitoxin · Microcystin

List 1: "Living agents"	List 2: "Molecular agents"
· Dengue (1-4) virus	

List 1: "Living agents"	List 2: "Molecular agents"
<ul style="list-style-type: none"> - Encephalitis or encephalomyelitis viruses: <ul style="list-style-type: none"> · Eastern encephalitis · Japanese encephalitis · Rift Valley virus · Tickborne encephalitis virus · Venezuelan encephalitis virus · Western encephalitis virus - Pseudomonas (Burkholderia) mallei - Pseudomonas (Burkholderia) pseudomallei - Vibrio cholerae - Salmonella typhi - Shigella dysenteriae - Chlamydia psittaci - Coxiella burnetii - Rickettsia spp - Influenza viruses: <ul style="list-style-type: none"> · A B C virus - Orthopox viruses: <ul style="list-style-type: none"> · Variola virus · Monkeypox virus - Histoplasma spp, Cryptococcus spp 	<ul style="list-style-type: none"> - Mycotoxins: <ul style="list-style-type: none"> · Trichothecene · Toxins T2 · Verruculotoxin (tremorgenic mycotoxin) - Tetrodotoxin - Palytoxin

NB: This list is subject to regular review. In the light of scientific development it might be necessary to add agents to the list or to delete them. Such a decision shall be taken according to procedures described in the protocol.
