Declaration form on Nothing to Declare or Nothing New to Declare for use in the information exchange

Measure	Nothing to declare	Nothing new to declare	Year of last declaration if nothing new to declare
A, part 1			
A, part 2 (i)			
A, part 2 (ii)			
A, part 2 (iii)			
B			
C			
E		X	2012
F		X	1992
G		X	2012

(Please mark the appropriate box(es) for each measure with a tick, and fill in the year of last declaration in the last column where applicable.)

Date: 10 April 2013

State Party to the Convention: GERMANY

Date of ratification/accession to the Convention: 07 April 1983

National point of contact: 243-rl@auswaertiges-amt.de

Form A, part 1

Exchange of data on research centres and laboratories

1. Name(s) of facility:

Bernhard-Nocht-Institut für Tropenmedizin

2. Responsible public or private organization or company:

Free and Hanseatic City of Hamburg

3. Location and postal address:

Bernhard-Nocht-Straße 74

D-20359 Hamburg

4. Source(s) of financing of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence:

- German Research Foundation (DFG)
- European Commission

5. Number of maximum containment units within the research centre and/or laboratory, with the indication of their respective size (m²):

one maximum containment unit, approx. 70 m²

6. Scope and general description of activities, including type(s) of micro organisms and/or toxins as appropriate:

Diagnosis of and research on viruses causing hemorrhagic fevers (Lassa, Ebola, Marburg, Hanta)

Development of methods for the detection of Dengue and Arena viruses, Monkey pox, Crimean-Congo fever

Form A, part 1

Exchange of data on research centres and laboratories

1. Name(s) of facility:

Friedrich-Loeffler-Institut, Federal Research Institute for Animal Health

2. Responsible public or private organization or company:

Federal Ministry of Food, Agriculture and Consumer Protection

3. Location and postal address:

Südufer 10

D-17493 Greifswald - Insel Riems

4. Source(s) of financing of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence:

Federal Ministry of Food, Agriculture and Consumer Protection

5. Number of maximum containment units within the research centre and/or laboratory, with the indication of their respective size (m²):

three maximum containment units, approx. 190 m²,

(FMD laboratory with effluent treatment, negative pressure and HEPA filters to protect the environment according to FAO standards, no equipment for the protection of staff, therefore unsuitable for work with human pathogens)

6. Scope and general description of activities, including type(s) of micro organisms and/or toxins as appropriate:

Diagnosis of and research on animal diseases

Veterinary medicine: mechanisms of pathogenesis, vaccines, diagnosis of Foot and mouth disease, Bovine spongiform encephalopathy, African swine fever, Classical swine fever and other animal diseases caused by viruses

Form A, part 1

Exchange of data on research centres and laboratories

1. Name(s) of facility:

Institut für Virologie der Philipps Universität Marburg

2. Responsible public or private organization or company:

Philipps-University Marburg

3. Location and postal address:

Hans-Meerwein-Straße 3

D-35043 Marburg

4. Source(s) of financing of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence:

State of Hessen, German Research Foundation (Deutsche Forschungs-gemeinschaft), Federal Ministry of Education and Research, European Union, Federal Ministry of Defence

5. Number of maximum containment units within the research centre and/or laboratory, with the indication of their respective size (m²):

two maximum containment units, 110 m² each

6. Scope and general description of activities, including type(s) of micro organisms and/or toxins as appropriate:

Basic research on Marburg virus, Ebola virus, Lassa virus, Nipah Virus, SARS-Corona Virus, Junin Virus and Crim-Congo Hemorrhagic Fever Virus.

Diagnostic services in surveillance of Class 4 - viruses and smallpox virus.

Form A, part 2(i)

National biological defence research and development programmes
Declaration

Are there any national programmes to conduct biological defence research and development within the territory of the State Party, under its jurisdiction or control anywhere? Activities of such programmes would include prophylaxis, studies on pathogenicity and virulence, diagnostic techniques, aerobiology, detection, treatment, toxinology, physical protection, decontamination and other related research.

Yes

If the answer is Yes, complete Form A, part 2 (ii) which will provide a description of each programme.

Form A, part 2 (ii)

National biological defence research and development programmes

Description

1. State the objectives and funding of each programme and summarize the principal research and development activities conducted in the programme. Areas to be addressed shall include: prophylaxis, studies on pathogenicity and virulence, diagnostic techniques, aerobiology, detection, treatment, toxinology, physical protection, decontamination and other related research.

Federal Ministry of Defence:
The R+D activities of the national program include: prophylaxis, diagnostic techniques, sampling and detection techniques, toxinology, decontamination and physical protection. Summaries and objectives of all research and development projects in the field of Medical NBC Defence are published on the Internet under http://www.sanitaetsdienst-bundeswehr.de.

Federal Ministry of Interior:
In 2012 no new projects were contracted. Publication of results of the project *Desinfektion von Persönlicher Schutzausrüstung (Disinfection of Personal Protective Equipment)*; see http://www.bbk.bund.de/SharedDocs/Downloads/BBK/DE/Publikationen/PublikationenForschung/FiB_Band17.pdf?__blob=publicationFile

Federal Ministry of Health:
The biological defence research and development activities of the Federal Ministry of Health are exclusively conducted at the Centre for Biological Threats and Special Pathogens (Zentrum für Biologische Gefahren und Spezielle Pathogene, ZBS; formerly named: Centre for Biological Security) of the Robert Koch Institute (RKI). The Robert Koch Institute is a federal institution in the portfolio of the Federal Ministry of Health and responsible for disease control and prevention in Germany. ZBS strengthens public health preparedness and response capabilities to serious public health incidents such as unusual outbreaks of disease, imported cases of rare infectious diseases or accidental or deliberate release of biological agents. Its research and development activities include: studies on the pathogenicity of infectious agents, diagnostic and detection techniques, toxinology as well as research on treatment and decontamination strategies.

2. State the total funding for each programme and its source.

Federal Ministry of Defence:

The total funding in 2012 was approx. 9,13 million € (whereof funding for Bundeswehr institutions was approx. 7,95 million €).

Federal Ministry of Interior: n.a.

Federal Ministry of Health :
The total funding for personnel, consumable items and equipment for ZBS in 2012 was approximately 6.9 million €.

3. Are aspects of these programmes conducted under contract with industry, academic institutions, or in other non-defence facilities?

Federal Ministry of Defence: Yes

Federal Ministry of Interior: n.a.

Federal Ministry of Health :
Less than 1 per cent of the budget for biodefence research and development activities is expended in contracted facilities. Contractors address subsidiary aspects of the activities only.

4. If yes, what proportion of the total funds for each programme is expended in these contracted or other facilities?

Federal Ministry of Defence: approx. 13 per cent

Federal Ministry of Interior: n.a.

Federal Ministry of Health : n.a.

5. Summarize the objectives and research areas of each programme performed by contractors and in other facilities with the funds identified under para 4.

Federal Ministry of Defence:
The objective of the contracted activities is to provide pertinent expertise and hardware to the Federal Ministry of Defence for the improvement of the B-defence capabilities. The research areas are the same as mentioned above under #1.

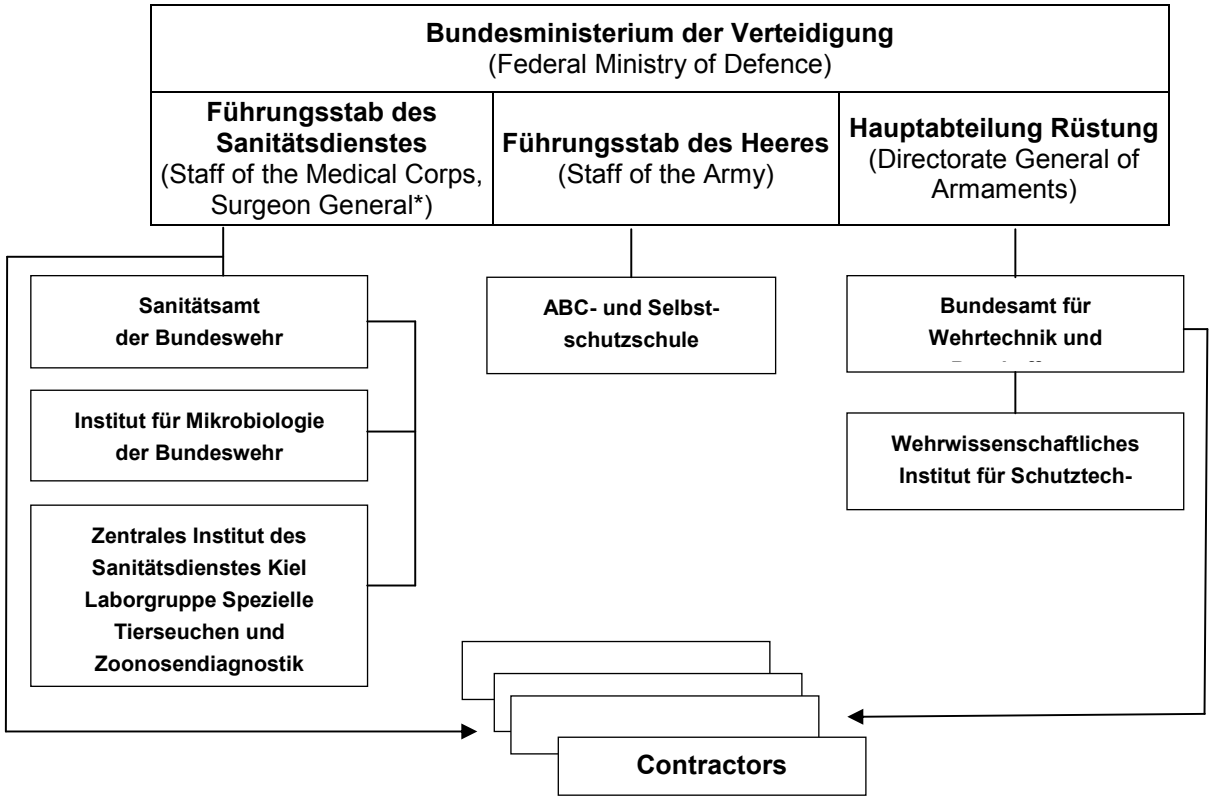
Federal Ministry of Interior: n.a.

Federal Ministry of Health : n.a.

6. Provide a diagram of the organisational structure of each programme and the reporting relationships (include individual facilities participating in the program).

Federal Ministry of Interior: n.a.

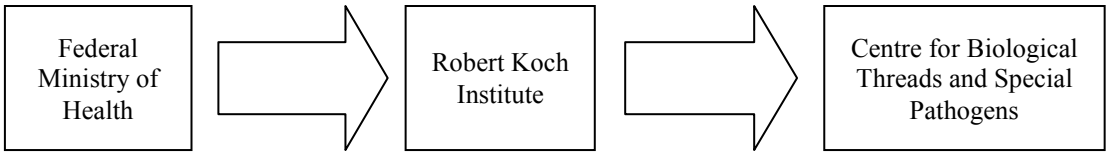
Federal Ministry of Defence:



* Surgeon General coordinates all biodefence R + D activities of the Bundeswehr

The Federal Ministry of Defence as well as the Bundeswehr (Federal Armed Forces) are in a state of transition to a new organizational structure. The reporting relationships will be updated in 2014 after full implementation of the new structure.

Federal Ministry of Health :



7. Provide a declaration in accordance with Form A, part 2 (iii) for each facility, both governmental and non-governmental, which has a substantial proportion of its resources devoted to each national biological defence research and development programme, within the territory of the reporting State, or under its jurisdiction or control anywhere.

Federal Ministry of Interior: n.a.

Federal Ministry of Defence:
4 Forms A, part 2 (iii) are attached

Federal Ministry of Health :
Form A, part 2 (iii) is attached for the Centre for Biological Threats and Special Pathogens at the Robert Koch Institute.

Form A, part 2 (iii)

National biological defence research and development programmes

Facility

1. What is the name of the facility?
Institut für Mikrobiologie der Bundeswehr (Bundeswehr Institute of Microbiology)

2. Where is it located?
D-80937 München, Neuherbergstraße 11
(48°12` N, 11°34` E)

3. Floor area of laboratory areas by containment level:

BL 2	1258 m²
BL 3	67 m²
BL 4	-- m²
Total Laboratory Floor Area	1325 m²

4. The organisational structure of the facility:

i) Total number of personnel:	65
ii) Division of personnel:	
Military	41
Civilian	24

iii) Division of personnel by category:	
Scientists	21
Technicians	38
Admin. And support staff	6

iv) Represented scientific disciplines:
Medicine, veterinary medicine, microbiology, virology, bacteriology, immunology, molecular biology, epidemiology, laboratory medicine

v) Contractor staff: 4

vi) Source of funding: Federal Ministry of Defence

vii) Funding levels for the following program areas:
The funding for personnel, consumable items and equipment in 2012 was approx. 5 million €.

Research	40 %

Development	25 %
Test and Evaluation	25 %
Education and Training	10 %

viii) Publication policy:
Results are published in scientific journals as well as in reports to the Federal Ministry of Defence and will be presented in national and international scientific meetings.

ix) Provide a list of publicly-available papers and reports resulting from the work published during the previous 12 month (To include authors, titles and full references):

1. Al Dahouk S, Hofer E, Tomaso H, Vergnaud G, Le Flèche P, Cloeckaert A, Koylass M S, Whatmore A M, Nöckler K, Scholz H C. Intraspecies biodiversity of the genetically homologous species Brucella microti. Appl Environ Microbiol. 2012;Mar;78(5):1534-43. doi: 10.1128/AEM.06351-11. Epub 2011 Dec 30.
2. Antwerpen M, Proenca D N, Ruckert C, Licht K, Kalinowski J, Hanczaruk M, Tiemann C, and Grass G. Draft Genome Sequence of Bacillus anthracis BF-1, Isolated from Bavarian Cattle. J Bacteriol. 2011;194:6360-6361.
3. Baneth G, Bourdeau P, Bourdoiseau G, Bowman D, Breitschwerdt E, Capelli G, Cardoso L, Dantas-Torres F, Day M, Dedet J P, Dobler G, Ferrer L, Irwin P, Kempf V, Kohn B, Lappin M, Little S, Maggi R, Miró G, Naucke T, Oliva G, Otranto D, Penzhorn B, Pfeffer M, Roura X, Sainz A, Shaw S, Shin S, Solano-Gallego L, Straubinger R, Traub R, Trees A, Truyen U, Demonceau T, Fitzgerald R, Gatti D, Hostetler J, Kilmer B, Krieger K, Mencke N, Mendão C, Mottier L, Pachnicke S, Rees B, Siebert S, Stanneck D, Mingote M T, von Simson C, Weston S. Vector-borne diseases--constant challenge for practicing veterinarians: recommendations from the CVBD World Forum. Parasit Vectors. 2012; 5:55.
4. Breithaupt A, Kalthoff D, Deutskens F, König P, Hoffmann B, Beer M, Meyer H, and Teifke JP. Clinical course and pathology in rats (Rattus norvegicus) after experimental cowpox virus infection by per-cutaneous and intranasal application. Veterinary Pathology. 2012;Epub 12 March 2012, DOI: 10.1177/0300985812439077
5. Bulut OC, Dyckhoff G, Splettstoesser W, Nemeth J, Klauschen F, Penzel R, Plinkert PK, Simon C, Weichert W, Stenzinger A. Unmasked: when a clinically malignant disease turns out infectious. A rare case of tularemia. Int J Surg Pathol. 2012;Epub 2012 Jun 6.
6. Dilcher M, Hasib L, Lechner M, Wieseke N, Middendorf M, Marz M, Koch A, Spiegel M, Dobler G, Hufert F T, Weidmann M. Genetic characterization of Tribec virus and Kemerovo virus, two tick-transmitted human-pathogenic orbiviruses. Virology. 2012;423(1):68-76.
7. Dilcher M, Koch A, Hasib L, Dobler G, Hufert F T, Weidmann M. Genetic characterization of Erve virus, a European Nairovirus distantly related to Crimean-Congo hemorrhagic fever virus. Virus Genes. 2012;45(3):426-432.
8. Dobler G, Gniel D, Petermann R, Pfeffer M. Epidemiology and distribution of tick-borne encephalitis. Wien Med Wochenschr. 2012;162(11-12):230-238.
9. Eisenberg T, Hamann H P, Kaim U, Schlez K, Seeger H, Schauerte N, Melzer F,

Tomaso H, Scholz H C, Koylass M S, Whatmore A M, Zschöck M. Isolation of potentially novel Brucella spp. from frogs. Appl Environ Microbiol. 2012;May;78(10):3753-5. doi: 10.1128/AEM.07509-11.

10. Escadafal C, Ölschläger S., Avšič-Županc T., Papa A., Vanhomwegen J., Wölfel R., Mirazimi A., Teichmann A., Donoso-Mantke O., Niedrig M. (2012) First international external quality assessment of molecular detection of Crimean-Congo hemorrhagic fever virus. PLoS Negl. Trop. Dis. 06/2012; 6(6):e1706
11. Espirito Santo C, Lin Y, Hao X, Wei G, Rensing C, and Grass G. Draft genome sequence of Pseudomonas psychrotolerans L19 isolated from copper alloy coins. J Bacteriol. 2012;194:1623-4.
12. Espirito Santo C, Quaranta D, and Grass G. Inactivation of Staphylococci on metallic copper surfaces. MicrobiologyOpen. 2012;1:46–52.
13. Ettinger J, Hofmann J, Enders M, Tewald F, Oehme R, Rosenfeld U, Sheikh Ali H, Schlegel M, Essbauer S, Osterberg A, Jacob J, Reil D, Klempa B, Ulrich R, Kruger D. Multiple synchronous outbreaks of Puumala virus, Germany, 2010. Emerg Infect Dis. 2012;(9):1461-1464.
14. Felder E., Mossbrugger I., Lange M., Wölfel R. (2012) Simultaneous Detection of Ricin and Abrin DNA by Real-Time PCR (qPCR). Toxins, 4(9):633-642.
15. Fischer D, Lorenz N, Heuser W, Kämpfer P, Scholz HC, Lierz M. Abscesses associated with a Brucella inopinata-like bacterium in a big-eyed tree frog (Leptopelis vermiculatus). J Zoo Wildl Med. 2012;Sep;43(3):625-8.
16. Frangoulidis D, Meyer H, Kahlhofer C, Splettstoesser WD.`Real-time` PCR-based detection of Coxiella burnetii using conventional techniques. FEMS Immunol Med Microbiol. 2012;Feb;64(1):134-6.
17. Frey S, Mossbrugger I, Altantuul D, Battsetseg D, Davaadorj R, Tserennorov D, Buyanjargal T, Otgonbaatar D, Zöller L, Speck S, Wölfel R, Dobler G, Essbauer S. Isolation, preliminary characterization and full genome analysis of tick-borne encephalitis virus from Mongolia. Virus Genes. 2012;45(3):413-425.
18. Gehringer H, Schacht E, Maylaender N, Zeman E, Kaysser P, Oehme R, Pluta S, Splettstoesser W D. Presence of an emerging subclone of Francisella tularensis holarctica in Ixodes ricinus ticks from south-western Germany. Ticks Tick Borne Dis. 2012;http://dx.doi.org/10.1016/j.ttbdis.2012.09.001
19. Georgi E, Schacht E, Scholz HC, Splettstoesser WD. Standardized broth microdilution antimicrobial susceptibility testing of Francisella tularensis subsp. holarctica strains from Europe and rare Francisella species. J Antimicrob Chemother. 2012;Oct;67(10):2429-33. doi: 10.1093/jac/dks238.
20. Grunow R, Verbeek L, Jacob D, Holzmann T, Birkenfeld G, Wiens D, Eichel-Streiber L v, Grass G, and Reischl U. Injektionsmilzbrand; neu aufgetretene Fälle bei Heroinabhängigen. Dtsch Arztebl International. 2012;109:843-848.
21. Gyuranecz M, Birdsell DN, Splettstoesser W, Seibold E, Beckstrom-Sternberg SM, Makrai L, Fodor L, Fabbi M, Vicari N, Johansson A, Busch JD, Vogler AJ, Keim P, and Wagner DM. Phylogeography of Francisella tularensis subsp. holarctica, Europe. Emerg Infect Dis. 2012;Feb;18(2):290-3.
22. Heinrich N, Saathoff E, Weller N, Clowes P, Kroidl I, Ntinginya E, Machibya H,

Maboko L, Löscher T, Dobler G, and Hölscher M (2012). High seroprevalence of Rift Valley Fever and evidence for endemic circulation in Mbeya, Tanzania, in a cross sectional study. PLoS Negl Trop Dis. 2012;6(3):e1557.

23. Heyman P, Thoma B R, Marié J L, Cochez C, and Essbauer S. In Search for Factors that Drive Hantavirus Epidemics. Front Physiol. 2012; 3:237.
24. Hofer E, Revilla-Fernández S, Al Dahouk S, Riehm J M, Nöckler K, Zygmunt M S, Cloeckaert A, Tomaso H, and Scholz HC. A potential novel Brucella species isolated from mandibular lymph nodes of red foxes in Austria. Vet Microbiol. 2012;Feb 24;155(1):93-9. doi: 10.1016/j.vetmic.2011.08.009.
25. Holzmann T, Frangoulidis D, Simon M, Noll P, Schmoldt S, Hanczaruk M, Grass G, Pregler M, Sing A, Hormansdorfer S, Bernard H, Grunow R, Zimmermann R, Schneider-Brachert W, Gessner A and Reischl U. Fatal anthrax infection in a heroin user from southern Germany, June 2012. Euro Surveill. 2012; 7. pii: 20204.
26. Karger A, Stock R, Ziller M, Elschner M C, Bettin B, Melzer F, Maier T, Kostrzewa M, Scholz HC, Neubauer H, and Tomaso H. Rapid identification of Burkholderia mallei and Burkholderia pseudomallei by intact cell Matrix-assisted Laser Desorption/Ionisation mass spectrometric typing. BMC Microbiol. 2012;Oct 10;12:229. doi: 10.1186/1471-2180-12-229.
27. Kiefer D, Dalantai G, Damdindorj T, Riehm J M, Tomaso H, Zöller L, Dashdavaa O, Pfister K, and Scholz HC. Phenotypical Characterization of Mongolian Yersinia pestis Strains. Vector Borne Zoonotic Dis. 2012;Mar;12(3):183-8. doi: 10.1089/vbz.2011.0748. Epub 2011 Oct 24.
28. Kunze U, ISW-TBE (Dobler G). Tick-borne encephalitis (TBE): an underestimated risk…still: report of the 14th annual meeting of the International Scientific Working Group on Tick-Borne Encephalitis (ISW-TBE). Ticks Tick-borne Dis. 2012;3(3):197-201.
29. Li X, Gong J, Hu Y, Cai L, Johnstone L, Grass G, Rensing C, and Wang G. Genome sequence of the moderately halotolerant, arsenite-oxidizing bacterium Pseudomonas stutzeri TS44. J Bacteriol. 2012;194:4473-4.
30. Massung RF, Cutler S J, and Frangoulidis D. Molecular Typing of Coxiella burnetii (Q Fever). Adv Exp Med Biol. 2012;984:381-96.
31. Proença DN, Espírito Santo C, Grass G, and Morais PV. Draft genome sequence of Serratia sp. strain M24T3, isolated from pinewood disease nematode Bursaphelenchus xylophilus. J Bacteriol. 2012;194:3764.
32. Riehm JM, Vergnaud G, Kiefer D, Damdindorj T, Dashdavaa O, Khurelsukh T, Zöller L, Wölfel R, Le Flèche P, and Scholz HC. Yersinia pestis lineages in Mongolia. PLoS One. 2012;7(2):e30624. doi: 10.1371/journal.pone.0030624. Epub 2012 Feb 17.
33. Roest HJ, van Gelderen B, Dinkla A, Frangoulidis D, van Zijderveld F, Rebel J, and van Keulen L. Q Fever in Pregnant Goats: Pathogenesis and Excretion of Coxiella burnetii. PLoS One. 2012;7(11):e48949. doi: 10.1371/journal.pone.0048949. Epub 2012 Nov 9.
34. Rueckert C, Licht K, Kalinowski J, Espirito Santo C, Antwerpen M, Hanczaruk M, Reischl U, Holzmann T, Gessner A, Tiemann C, and Grass G. Draft Genome Sequence of Bacillus anthracis UR-1, Isolated from a German Heroin User. J Bacteriol. 2012;194:5997-5998.

35. Schaumann R, Knoop N, Genzel GH, Losensky K, Rosenkranz C, Stîngu CS, Schellenberger W, Rodloff AC, and Eschrich K. A step towards the discrimination of beta-lactamase-producing clinical isolates of Enterobacteriaceae and Pseudomonas aeruginosa by MALDI-TOF mass spectrometry. Med Sci Monit. 2012;Sep;18(9):MT71-7.
36. Schlegel M, Kindler E, Essbauer S, Wolf R, Thiel J, Groschup M, Heckel G, Oehme R, and Ulrich R. Tula virus infections in the Eurasian water vole in Central Europe. Vector Borne Zoonotic Dis. 2012;12(6):503-13.
37. Schultze D, Müller B, Bruderer T, Dollenmaier G, Riehm J M, and Boggian K. A traveller presenting with severe melioidosis complicated by a pericardial effusion: a case report. BMC Infect Dis. 2012;Oct 4;12:242. doi: 10.1186/1471-2334-12-242.
38. Scholz HC, Margos G, Derschum H, Speck S, Tserennorov D, Erdenebat N, Undraa B, Enkhtuja M, Battsetseg J, Otgonchimeg C, Otgonsuren G, Nymadulam B, Römer A, Thomas A, Essbauer S, Wölfel R, Kiefer D, Zöller L, Otgonbaatar D, and Fingerle V. High prevalence of genetically diverse Borrelia bavariensis-like strains in Ixodes persulcatus from Selenge Aimag, Mongolia. Ticks Tick Borne Dis. 2012;Oct 16. doi:pii: S1877-959X(12)00080-5. 10.1016/j.ttbdis.2012.08.004. [Epub ahead of print]
39. Sonnleitner ST, Simeoni J, Lang S, Dobler G, Speck S, Zelger R, Schennach H, Lass-Flörl C, Walder G. Spotted Fever Group - Rickettsiae in the Tyrols: Evidence by Seroepidemiology and PCR. Zoonoses Public Health. 2012;[Epub ahead of print]
40. Speck S, Derschum H, Damdindorj T, Dashdavaa O, Jiang J, Kaysser P, Jigjav B, Nyamdorj E, Baatar U, Munkhbat E, Choijilsuren O, Gerelchuluun O, Römer A, Richards A L, Kiefer D, Scholz H, Wölfel R, Zöller L, Dobler G, and Essbauer S. Rickettsia raoultii, the predominant Rickettsia found in Mongolian Dermacentor nuttalli. Ticks Tick Borne Dis. 2012;3(4): 227-231.
41. Stefanoff P, Pfeffer M, Hellenbrand W, Rogalska J, Rühe F, Makówka A, Michalik J, Wodecka B, Rymaszewska A, Kiewra D, Baumann-Popczyk A, and Dobler G. Virus Detection in Questing Ticks is not a Sensitive Indicator for Risk Assessment of Tick-Borne Encephalitis in Humans. Zoonoses Public Health. 2012; [Epub ahead of print]
42. Tappe D, Nemecek A, Zipp F, Emmerich P, Gabriel M, Günther S, Dobler G, Schmidt-Chanasit J, and Stich A. Two laboratory-confirmed cases of Japanese encephalitis imported to Germany by travelers returning from southeast Asia. J Clin Virol. 2012;54(3):282-285.
43. Vanhomwegen J, Alves MJ, Zupanc T.A., Bino S., Chinikar S., Karlberg H., Korukluoğlu G., Korva M., Mardani M., Mirazimi A., Mousavi M., Papa A., Saksida A., Sharifi-Mood B., Sidira P., Tsergouli K., Wölfel R., Zeller H., Dubois P. Diagnostic assays for Crimean-Congo Hemorrhagic Fever. Emerg Infect Dis. 2012;18(12):1958-65
44. Wittwer M, Lasch P, Drevinek M, Schmoldt S, Indra A, Jacob D, Grunow R. First Report: Application of MALDI-TOF MS within an External Quality Assurance Exercise for the Discrimination of Highly Pathogenic Bacteria from Contaminant Flora. Applied Biosafety: Journal of the American Biological Safety Association. 2012; 17(2)
45. Wölfel R, and Zöller L. Medical Bio Reconnaissance in the Bundeswehr - A modern

concept for new challenges, Wehrmed Monatsschr. 2012;50(7), 193-194

5. Brief description of the biological defence work carried out at the facility, including types of micro-organisms and/or toxins studied, as well as outdoor studies of biological aerosols:
a. Research, development and evaluation of approaches for the rapid detection, identification and differentiation and typing of *Orthopox viruses, Alpha-, Flavi-, Bunya- and Filo viruses* as well as *Coxiella, Burkholderia, Yersinia, Brucella, Bacillus* and *Francisella spp.* using polyclonal and monoclonal antibodies, biochemical methods and real-time PCR
b. Establishment of sequence data banks and tools for forensic typing
c. Evaluation and production of test kits for the immunodiagnosis of relevant infections
d. Studies of the epidemiology, immunopathogenesis and immune response against *Francisella tularensis, Bacillus spp., Burkholderia spp., Brucella spp.* and *Yersinia spp.*

The program covers pathogen Risk Group II and III organisms.
No outdoor studies of biological aerosols.

Facility

1. What is the name of the facility?
Wehrwissenschaftliches Institut für Schutztechnologien – ABC-Schutz
(Bundeswehr Research Institute for Protective Technologies and NBC-Protection)

2. Where is it located?
D-29633 Munster/Oertze, Humboldtstrasse 100, Germany
(53°00 N, 10°08 E)

3. Floor area of laboratory areas by containment level:

BL 2	520 m²
BL 3	360 m²
BL 4	---- m²
Total Laboratory Floor Area	880 m²

4. The organisational structure of the Biological Department:
The workload of the Biological Department of the facility is approx. 90 per cent in B-defence and approx. 10 per cent in bio-analytics. The following personnel figures cover the total strength for both working areas because of the engagement of some of the personnel in both areas.

i) Total Number of personnel: 34

ii) Division of personnel Civilian 34

iii) Division of personnel by category

Scientists	9
Engineers	5
Technicians	18
Admin. and support staff	2

iv) Represented scientific disciplines:
Biology, biochemistry, immunology, molecular biology, bacteriology, mycology, virology, toxicology, toxinology, biotechnology, environmental toxicology, ecology, aerosol biology, disinfection, drinking water treatment

v) Contractor staff: 1

vi) Source of funding: Federal Ministry of Defence

vii) Funding levels for the following program areas:
The funding for the 90 per cent share for personnel, consumable items and equipment in 2012 was approx. 2.1 Mil €.

Research	40 %
Development	30 %

Test and Evaluation 30 %

viii) Publication policy
Results will be published in reports to the Federal Office for Military Technology and Procurement and to the Federal Ministry of Defence. They also will be presented in public scientific journals and in national and international scientific meetings and symposiums.

ix) Provide a list of publicly- available papers and reports resulting from the work published during the previous 12 month (To include authors, titles and full references):

1. Richardt, A. (Ed.); Hülseweh, B. (Ed.); Niemeyer, B. (Ed.); Sabath, F. (Ed.): CBRN Protection - Managing the Threat of Chemical, Biological, Radioactive and Nuclear Weapons, Wiley-VCH, 26 Dec. 2012, ISBN-10: 3527324135
2. Richardt, A.; Sabath, F.: "A Glance Back – Myth and Facts about CBRN Incidents", In: CBRN Protection - Managing the Threat of Chemical, Biological, Radioactive and Nuclear Weapons, Wiley-VCH, pp. 3 - 38, 26 Dec. 2012, ISBN-10: 3527324135
3. Hülseweh, B.; Marschall, H.-J.; Rambousky, R.: "Why Are Reliable CBRN detector Technologies Needed?", In: CBRN Protection - Managing the Threat of Chemical, Bi-ological, Radioactive and Nuclear Weapons, Wiley-VCH, pp. 169 - 178, 26 Dec. 2012, ISBN-10: 3527324135
4. Hülseweh, B.: Characteristics of Biological Warfare Agents – Diversity of Biology. In: CBRN Protection - Managing the Threat of Chemical, Biological, Radioactive and Nuclear Weapons. Richardt A, Hülseweh B, Niemeyer B, and Sabath F (eds.), Wiley-VCH, pp. 103 - 124, 26 Dec. 2012, ISBN-10: 3527324135
5. Hülseweh, B., and Marschall, H.J.: Detection of Biological Agents. In: CBRN Protection Managing the Threat of Chemical, Biological, Radioactive and Nuclear Weapons. Wiley-VCH, pp. 211 - 241, 26 Dec. 2012, ISBN-10: 3527324135
6. Hülseweh B., Marschall H.J., Rambousky R , Richardt A, (2012): CBRN Sensors – A Key Technology for an effective CBRN counter measure strategy, In: CBRN Protec-tion: Managing the Threat of Chemical, Biological, Radioactive and Nuclear Weapons, Wiley-VCH, pp. 169 - 178, 26 Dec. 2012, ISBN-10: 3527324135
7. Richardt, A. and Hülseweh, B. (2012): Principles and Practise of Desinfection of Biological Warfare Agents – How clean is clean enough?, In: CBRN Protection: Managing the Threat of Chemical, Biological, Radioactive and Nuclear Weapons, Wiley-VCH, pp. 383 - 409, 26 Dec. 2012, ISBN-10: 3527324135
8. Rülker T., Voß L., Thullier P., O' Brien LM., Pelat T., Perkins SD., Langermann C., Schirrmann T., Dübel S., Marschall H.J., Hust M., Hülseweh B.: Isolation and charac-terisation of a human-like antibody fragment (scFv) that inactivates VEEV in vitro and in vivo. PLoS One. 2012;7(5): e37242.
9. Sagripanti JL., Grote G., Niederwöhrmeier B., Hülseweh B., Marschall HJ.: Photochemical inactivation of Pseudomonas aeruginosa. Photochem Photobiol. 2012, Jan-Feb; 88(1): 201-206
10. Pagel-Wieder, S., B. Niederwöhrmeier and M.A. Avondet (2012): Lateral Flow Assays – a simple and fast detection of biological agents. Wehrwissenschaft Forschung & Technologie, Jahresbericht, BMVg 2011

5. Brief description of the biological defence work carried out at the facility, including types of micro-organisms and/or toxins studied, as well as outdoor studies of biological aerosols:

The biological defence work is done in laboratories of biosafety levels BSL 1- 3 and biosafety S 1 laboratories for genetically engineered agents, which allow development and research in all areas of the B-protection and the investigation of suspect samples in case of danger.
The mission is the closure of capability gaps in the B-defence of the Bundeswehr. Development and optimization of the rapid identification/detection of biowarfare agents, development of the elemental basics for the generation and verification of protection factors and both outline and establishment of new and pioneering approaches in decontamination are the primary focus of the biological laboratories. In detail work is done in the fields of:

a. Development of early-warning systems permitting non-specific identification of toxins, micro-organisms and viruses,
b. Optimization of the properties of the available, previously generated detection molecules in their specificity, affinity and avidity for use in the immunological detection and identification systems, which inevitable must be suitable also for field-use. Use of new technologies (eg. development and identification of recombinant antibodies). The repertoire of antibodies and detection molecules for biological agents is constantly expanded.
c. Optimization and automatisation of immunological and molecular genetical identification methods.
d. Development of equipment and procedures for sampling and rapid and accurate identification of toxins and pathogenic agents in samples from air, water, soil, vegetation (sensor-equipment, collectors, detection kits, automatisation).
e. Sample concentration and preparation incl. inactivation for identification in different matrices.
f. Development of procedures for disinfection and decontamination.
g. B-Agents and toxin laboratory analysis with suspect samples.
h. Toxin-preparation and analytics.
i. Participation in round-robin-excercises.
j. Nanotechnology for material like clothes, paint etc.

The current program covers non-human/-animal pathogen biosafety level 1 and pathogenic biosafety level 2 and 3 organisms as well as low-molecular weight toxins. Outdoor studies were performed with commercial “Xentari” (*Bacillus thuringiensis var. aizawai*) and ovalbumin as a simulants for biological aerosols. For disinfection-tests *Bacillus subtilis, Bacillus thuringiensis* and *Bacillus atrophaeus* were used as simulants. For water-purification-tests *Pseudomonas fluorescens, Escherichia coli (biosafety level 1)* and *Micrococcus luteus* were used as simulants ouside the laboratory.

Facility

1.What is the name of the facility?
Zentrales Institut des Sanitätsdienstes der Bundeswehr Kiel, Abteilung II – Veterinärmedizin, Laborgruppe Spezielle Tierseuchen- und Zoonosendiagnostik
(Central Institute of the Bundeswehr Medical Service Kiel, Laboratory for Infectious Animal Diseases and Zoonosis).

2.Where is it located?
D-24119 Kronshagen, Kopperpahler Allee 120.
(54°20´24´´ N, 10°05´37´´ E)

3.Floor area of laboratory areas by containment level:

BL 2	274 m^2
BL 3	47 m^2
BL 4	--
Total Laboratory Floor Area	321 m^2

4.The organisational structure of the facility:
The workload is 75 per cent in the diagnosis of infectious animal diseases and zoonosis and 25 per cent in B-defence.

i)Total number of personnel: 5

ii) Division of personnel:

Military	3
Civilian	2

iii) Division of personnel by category:

Scientists	2
Technicians	3

iv)Represented scientific disciplines:
veterinary medicine, microbiology, virology, bacteriology, parasitology, molecular biology, immunology

v) Contractor staff: 0

vi) Source of funding: Federal Ministry of Defence

vii) Funding levels for the following program areas:
The funding for consumable items and equipment in 2012 was approx. 0,65 million €

Development	40 %
Test and Evaluation	20 %
Diagnosis	35 %

Education and training 5 %

viii) Publication policy:
Results will be published primarily in reports to the Federal Ministry of Defence and in journals for military medicine or technology

ix) Provide a list of publicly- available papers and reports resulting from the work published during the previous 12 month (To include authors, titles and full references):

1. Runge M., Binder A., Schotte U., Ganter M. Investigations concerning the prevalence of Coxiella burnetii and Chlamydia abortus in sheep in correlation with management systems and abortion rate in Lower Saxony in 2004. Berl. Münch. Tierärztl. Wochenschr., 2012, 125 (3-4), 138-143.
2. Tandler, H., Schotte, U., Binder, A. Mikrobiologische PCR-Nachweisverfahren im Einsatz (Microbiological PCR detection methods in missions). Wehrmed. Mschr. 2012, 56 (8-9), 194-197.
3. Seinige, D., Kehrenberg, C., Krischek, K., Binder, A., Klein, G. Nachweis und Unterscheidung von lebenden und toten Bakterien mit der PCR am Beispiel von Campylobacter spp. (Detection and Differentiation of viable and nonviable Bacteria by PCR – for Example Campylobacter spp.). Wehrmed. Mschr. 2012, 56 (8-9), 198-200.
4. Schlegel, M., Baumann, K., Breithaupt, A., Binder, A., Schotte, U., Ruhl, S., Krohmann, C., Essbauer, S., Frangoulidis, D., Kayßer, P., Meyer, H., Riehm, J., Faulde, M., Lewitzki, J., Sauer, S., Ulrich, R.G., Teifke, J.P. Spielen Nagetiere als Überträger von Zoonoseerregern im Einsatzgebiet der Bundeswehr in Afghanistan eine Rolle? (Rodents in Afghanistan: are these vectors for zoonotic agents in areas of operations of German Armed Forces?). Wehrmed. Mschr. 2012, 56 (8-9), 203-207.
5. Kreienbrink, G., Pöllein, W., Fender, T., Emmler, J., Schotte, U., Binder, A. Lebensmittelbedingte Gruppenerkrankungen in der Bundeswehr unter besonderer Berücksichtigung von Noroviren (Foodborne outbreaks in the German Federal Armed Forces with emphasis on Noroviruses). Wehrmed. Mschr. 2012, 56 (10), 240-246.

5. Brief description of the biological defence work carried out at the facility, including types of micro-organisms and/or toxins studied, as well as outdoor studies of biological aerosols:
a. Development and evaluation of diagnostic systems permitting specific identification of microorganisms, parasites, viruses and toxins
b. Development of test kits for use in a deployable containerised field laboratory
c. Diagnosis of zoonoses i.e. Q-fever, anthrax, rabies, leishmaniasis, avian influenza and other influenza viruses
d. Diagnosis of infectious animal diseases, especially swine fever and babesiosis
e. Diagnosis of food and waterborne threats, i.e. Vibrio cholerae and Norovirus
f. Evaluation of test kits for the detection of Clostridium botulinum toxins

The current program covers RG I, II and III organisms.

No outdoor studies of biological aerosols.

Facility

1. What is the name of the facility?
   ABC- und Selbstschutzschule der Bundeswehr (NBC-Defence and Self-protection School of the Bundeswehr)

2. Where is it located?
   D-87527 Sonthofen/Allgäu, Mühlenweg 12
   (47°31' N, 10°17' E)

3. Floor area of laboratory areas by containment level:

BL 2	270 m^2
BL 3	--
BL 4	--
Total Laboratory Floor Area	270 m^2

4. The organisational structure of the facility:
   The workload of the Biology Section of the facility is approx. 95 per cent in B-defence and 5 per cent in environmental protection. The following personnel figures cover the total strength for both working areas because of the engagement of some of the personnel in both areas.

i) Total number of personnel: 8

ii) Division of personnel:

Military	4
Civilian	4

iii) Division of personnel by category:

Scientists	2
Engineers	1
Technicians	4
Admin. and support staff	1

iv) Represented scientific disciplines:
Parasitology, toxicology, microbiology, veterinary medicine

v) Contractor staff: 0

vi) Source of funding: Federal Ministry of Defence

vii) Funding levels for the following program areas:
The funding for the 95 per cent share for personnel, consumable items and equipment in 2012 was approx. 0,2 million €

Development	30 %
Test and Evaluation	20 %
Education and Training	50 %

viii)Publication policy:
Results will be published primarily in reports to the Federal Office for Military Technology and Procurement and to the Federal Ministry of Defence and will be presented in scientific meetings.

ix) Provide a list of publicly- available papers and reports resulting from the work published during the previous 12 month (To include authors, titles and full references):

none

5. Brief description of the biological defence work carried out at the facility, including types of micro-organisms and/or toxins studied, as well as outdoor studies of biological aerosols:
a. Conceptual development of biological defence in the Bundeswehr
b. Initiation of and participation in the development of biological defence material and equipment; drafting of operational requirements
c. Review and establishment of detection methods for pathogens and toxins suitable for military use
d. Development of identification methods for the detection of low molecular toxins
e. Training of NBC defence personnel (theory and practice) including familiarisation with the handling of vectors, microorganisms and toxins
f. Training support for non-military government authorities
g. Training support for military personnel of other states
h. Initiation and expert monitoring of studies in the field of biological defence
i. Drafting of joint publications for biological defence

The current program covers RG I and II organisms, inactivated material of pathogens RG III and IV, insects and ticks as well as high and low-molecular toxins; no work has been done with active viruses.

No outdoor studies of biological aerosols.

Facility

1. What is the name of the facility?
The Centre for Biological Threats and Special Pathogens (Zentrum für Biologische Gefahren und Spezielle Pathogene, ZBS; formerly named: Centre for Biological Security) at the Robert Koch Institute (RKI).

2. Where is it located (include both address and geographical location)?
Nordufer 20, 13353 Berlin (52°32' N 13°20' E)
Seestraße 10, 13353 Berlin (52°32' N 13°20' E)
DGZ-Ring 1, 13086 Berlin (52°33' N 13°26' E)

3. Floor area of laboratory areas by containment level:

BL2	1350 sqm
BL3	130 sqm
BL4	0 sqm
Total laboratory floor area	1480 sqm

4. The organizational structure of each facility.
(i) Total number of personnel 109

(ii) Division of personnel:

Military	0
Civilian	109

(iii) Division of personnel by category:

Scientists	61
Engineers	0
Technicians	43
Administrative and support staff	5

(iv) List the scientific disciplines represented in the scientific/engineering staff.
Bacteriology, biology, biochemistry, bioinformatics, chemistry, chemometrics, immunology, laboratory medicine, medicine, microbiology, molecular biology, proteomics, spectroscopy, toxicology, veterinary medicine, virology

(v) Are contractor staff working in the facility? n.a.

(vi) What is (are) the source(s) of funding for the work conducted in the facility, including indication if activity is wholly or partly financed by the Ministry of Defence?
Federal Ministry of Health, Federal Ministry of the Interior, Federal Ministry for Education and Research, European Union, European Commission, German Research Foundation (DFG), World Health Organisation.
No funding by the Federal Ministry of Defence.

(vii) What are the funding levels for the following programme areas:
The total funding of the Federal Ministry of Health for personnel, consumable items and equipment of ZBS in 2012 was approximately 6.9 million €.

Research and development	90 per cent
Test and evaluation	10 per cent

(viii) Briefly describe the publication policy of the facility:
Scientists are encouraged to publish their results in peer reviewed scientific journals as well as present their work at national and international professional meetings. The Robert Koch Institute signed the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities, available at http://oa.mpg.de/lang/en-uk/berlin-prozess/berliner-erklarung/. Under the Dual-use Regulation of the Robert Koch Institute scientists are required to assess the dual-use potential of their research before a project is started , during the project period and before results are published.

(ix) Provide a list of publicly- available papers and reports resulting from the work published during the previous 12 month (To include authors, titles and full references):

1. Achazi K, Patel P, Paliwal R, Radonić A, Niedrig M, Donoso-Mantke O (2012): RNA interference inhibits replication of tick-borne encephalitis virus in vitro. Antiviral Res. 93 (1): 94-100. Epub 2011 Nov 9. doi: 10.1016/j.antiviral.2011.10.023.
2. Adlhoch C, Kaiser M, Loewa A, Ulrich M, Forbrig C, Adjogoua EV, Akoua-Koffi C, Couacy-Hymann E, Leendertz SAJ, Rietschel W, Boesch C, Ellerbrok H, Schneider BS, Leendertz FH (2012): Diversity of Parvovirus 4–like Viruses in Humans, Chimpanzees, and Monkeys in Hunter–Prey Relationships. Emerg. Infect. Dis. 18 (5): 859–862.
3. Bourquain D, Nitsche A (2012): Cowpox virus but not Vaccinia virus induces secretion of CXCL1, IL-8 and IL-6 and chemotaxis of monocytes in vitro. Virus Res.: Epub Nov 30. doi: 10.1016/j.virusres.2012.11.013.
4. Calvignac-Spencer S, Adjogoua EV, Akoua-Koffi C, Hedemann C, Schubert G, Ellerbrok H, Leendertz SAJ, Pauli G, Leendertz FH (2012): Origin of Human T-Lymphotropic Virus Type 1 in Rural Côte d'Ivoire. Emerg. Infect. Dis. 18 (5): 830–833.
5. Corman VM, Müller MA, Costabel U, Timm J, Binger T, Meyer B, Kreher P, Lattwein E, Eschbach-Bludau M, Nitsche A, Bleicker T, Landt O, Schweiger B, Drexler JF, Osterhaus AD, Haagmans BL, Dittmer U, Bonin F, Wolff T, Drosten C (2012): Assays for laboratory confirmation of novel human coronavirus (hCoV-EMC) infections. Euro Surveill. 17 (49): pii: 20334.

6. Dabrowski PW, Nitsche A (2012): mPSQed: A software for the Design of Multiplex Pyrosequencing Assays. PLoS One 7 (6): e38140. Epub Jun 4. doi:10.1371/journal.pone.0038140.
7. Döllinger J, Schröder K, Witt N, Heunemann C, Nitsche A (2012): Comparison of real-time PCR and MassTag PCR for the multiplex detection of highly pathogenic agents. Mol. Cell. Probes 26 (5): 177–181.
8. Domingo C, Escadafal C, Rumer L, Méndez JA, García P, Sall AA, Teichmann A, Donoso-Mantke O, Niedrig M (2012): First International External Quality Assessment Study on molecular and serological methods for Yellow Fever diagnosis. PLoS One 7 (5): e36291. doi: 10.1371/journal.pone.0036291.
9. Domingo C, Patel P, Yillah J, Weidmann M, Méndez JA, Nakouné ER, Niedrig M (2012): Advanced yellow fever virus genome detection in point-of-care facilities and reference laboratories. J. Clin. Microbiol. 50 (12): 4054-4060. Epub Oct 10. doi: 10.1128/JCM.01799-12.
10. Ducomble T, Wilking H, Stark K, Takla A, Askar M, Schaade L, Nitsche A, Kurth A (2012): Lack of Evidence for Schmallenberg Virus Infection in Highly Exposed Persons, Germany, 2012. Emerg. Infect. Dis. 18 (8): Epub Jun 1. DOI: 10.3201/eid1808.120533.
11. Ergunay K, Sayiner AA, Litzba N, Lederer S, Charrel R, Kreher P, Us D, Niedrig M, et al. (2012): Multicentre evaluation of Central Nervous system infections due to Flavi and Phleboviruses in Turkey. J. Infect. 65 (4): 343-349. Epub Jun 13. DOI: 10.1016/j.jinf.2012.05.010.
12. Escadafal C, Avšič-Županc T, Vapalahti O, Niklasson B, Teichmann A, Niedrig M, Donoso-Mantke O (2012): Second external quality assurance study for the serological diagnosis of hantaviruses in Europe. PLoS Negl. Trop. Dis. 6 (4): e1607. doi: 10.1371/journal.pntd.0001607.
13. Escadafal C, Ölschläger S, Avšič-Županc T, Papa A, Vanhomwegen J, Wölfel R, Mirazimi A, Teichmann A, Donoso-Mantke O, Niedrig M (2012): First international external quality assessment of molecular detection of Crimean-Congo hemorrhagic fever virus. PLoS Negl. Trop. Dis. 6 (6): e1706. doi:10.1371/journal.pntd.0001706.
14. Ettinger J, Geyer H, Nitsche A, Zimmermann A, Brune W, Sandford GR, Hayward GS, Voigt S (2012): Complete Genome Sequence of the English Isolate of Rat Cytomegalovirus (Murid Herpesvirus 8). J. Virol. 86 (24): 13838. doi: 10.1128/JVI.02614-12.
15. Förster C, Eichert A, Oberthür D, Betzel C, Geßner R, Nitsche A, Fürste JP (2012): Features of 'All LNA' duplexes showing a new type of nucleic acid geometry. J. Nucleic Acids 2012: Article ID 156035. Epub Mar 1. doi: 10.1155/2012/156035.
16. Gershman MD, Staples JE, Bentsi-Enchill AD, Breugelmans JG, Brito GS, Bastoscamacho LA, Cottin P, Domingo C, Durbin A, Gascon J, Guenaneche F, Hayes EB, Jelenik Z, Khromava A, Martins RD, Masana Wilson M, Massy N, Nasidi A, Niedrig M, et al.; The Brighton Collaboration Viscerotropic Disease Working Group (2012):

Viscerotropic disease: Case definition and guidelines for collection, analysis, and presentation of immunization safety data. Vaccine 30 (33): 5038-5058. Epub May 3. doi: 10.1016/j.vaccine.2012.04.067.

17. Gould EA, de Lamballerie X, Coutard B, Fooks AR, Outlaw M, Drosten C, Guenther S, Klempa B, Pinschewer D, Avsic-Zupanc T, Sabeta C, Lukashev A, Eropkin M, Koslov A, Zverev V, Lvov D, Zhebrun A, Shipulin G, Niedrig M, et al. (2012): The European virus archive: A new resource for virology research. Antiviral Res. 95 (2): 167-171. Epub May 22. DOI: 10.1016/j.antiviral.2012.05.005.
18. Gürtler L, Bauerfeind U, Blümel J, Burger R, Drosten C, Gröner A, Heiden M, Hildebrandt M, Jansen B, Montag-Lessing T, Offergeld R, Pauli G, et al. (2012): Arbonematoden – durch Arthropoden übertragbare Nematoden-Infektionen. Bundesgesundheitsblatt - Gesundheitsforschung - Gesundheitsschutz 55 (8): 1044–1056.
19. Gürtler L, Bauerfeind U, Blümel J, Burger R, Drosten C, Gröner A, Heiden M, Hildebrandt M, Jansen B, Montag-Lessing T, Offergeld R, Pauli G, Seitz R, Schlenkrich U, Schottstedt V, Strobel J, Willkommen H mit besonderer Unterstützung von, Bannert N (2012): XMRV ist nicht human-pathogen und hat keine Bedeutung für die Sicherheit von Blut und Blutprodukten. Bundesgesundheitsblatt - Gesundheitsforschung - Gesundheitsschutz 55 (8): 1057–1060.
20. Kallies R, Arbrandt G, Niklasson B, Niedrig M (2012): Development and characterization of murine monoclonal antibodies to first and second Ljungan virus genotypes. J. Virol. Methods 184 (1-2): 27-33. Epub May 11. doi: 10.1016/j.jviromet.2012.05.001.
21. Kiffner C, Vor T, Hagedorn P, Niedrig M, Rühe F (2012): Determinants of tick-borne encephalitis virus antibody presence in roe deer (Capreolus capreolus) sera. Med. Vet. Entomol. 26 (1): 18–25. Epub 2011 May 18. doi: 10.1111/j.1365-2915.2011.00961.x.
22. Kohl C, Vidovszky MZ, Mühldorfer K, Dabrowski PW, Radonić A, Nitsche A, Wibbelt G, Kurth A, Harrach B (2012): Genome analysis of bat adenovirus 2: indications of interspecies transmission. J. Virol. 86 (3): 1888-1892. Epub 2011 Nov 30.
23. Kohl C, Lesnik R, Brinkmann A, Ebinger A, Radonić A, Nitsche A, Mühldorfer K, Wibbelt G, Kurth A (2012): Isolation and characterization of three mammalian orthoreoviruses from European bats. PLoS ONE 7 (8): e43106.
24. Kohler S, Bethke N, Böthe M, Sommerick S, Frentsch M, Romagnani C, Niedrig M, Thiel A (2012): The early cellular signatures of protective immunity induced by live viral vaccination. Eur. J. Immunol. 42 (9): 2363-2373. Epub Jun 26. doi: 10.1002/eji.201142306.
25. Kurth A, Kohl C, Brinkmann A, Ebinger A, Harper JA, Wang LF, Mühldorfer K, Wibbelt G (2012): Novel Paramyxoviruses in Free-ranging European Bats. PLoS One 7 (6): e38688. Epub Jun 21. doi: 10.1371/journal.pone.0038688.

26. Lemmer K, Roder A, Nattermann H, Schwebke I, Mielke M, Dorner B, Pauli G, Grunow R (2012): Desinfektion von Persönlicher Schutzausrüstung – Methodenentwicklung zur standardisierten Untersuchung der Wirksamkeit von Desinfektionsmitteln auf Oberflächen der Persönlichen Schutzausrüstung gegen Sporen, Viren und Toxine unter praxisnahen Bedingungen und Anwendung der Untersuchungsmethoden am Beispiel von Peressigsäure. In: Bundesamt für Bevölkerungsschutz und Katastrophenhilfe (Hrsg), Forschung im Bevölkerungsschutz, Bd. 17. Bonn: Bundesamt für Bevölkerungsschutz und Katastrophenhilfe, http://www.risikomanagement-bau.de/SharedDocs/Downloads/BBK/DE/Publikationen/PublikationenForschung/FiB_Band17.pdf?__blob=publicationFile.
27. Linden A, Wirtgen M, Nahayo A, Heyman P, Niedrig M, Schulze Y (2012): Tickborne encephalitis virus antibodies in wild cervids in Belgium. Vet. Rec. 170 (4): 108.
28. Madani TA, Azhar EI, Abuelzein ET, Kao M, Al-Bar HM, Niedrig M, Ksiazek TG (2012): Alkhumra, Not Alkhurma, Is the Correct Name of the New Hemorrhagic Fever Flavivirus Identified in Saudi Arabia. Intervirology 55 (4): 259-260. Epub 2012 Mar 19. DOI: 10.1159/000337238.
29. Mätz-Rensing K, Stahl-Hennig C, Kramski M, Pauli G, Ellerbrok H, Kaup FJ (2012): The Pathology of Experimental Poxvirus Infection in Common Marmosets (Callithrix jacchus): Further Characterization of a New Primate Model for Orthopoxvirus Infections. J. Comp. Pathol. 146 (2-3): 230-242. Epub 2011 Jul 23. doi:10.1016/j.jcpa.2011.06.003.
30. Marklewitz M, Gloza-Rausch F, Kurth A, et al. (2012): First isolation of an Entomobirnavirus from free-living insects. J. Gen. Virol. 93 (11): 2431-2435. Epub Aug 8. doi: 10.1099/vir.0.045435-0.
31. Méndez JA, Usme-Ciro JA, Domingo C, et al. (2012): Phylogenetic reconstruction of dengue virus type 2 in Colombia. Virology J. 9: 64. doi:10.1186/1743-422X-9-64.
32. Negri P, Chen G, Kage A, Nitsche A, Naumann D, Xu B, Dluhy RA (2012): Direct Optical Detection of Viral Nucleoprotein Binding to an Anti-Influenza Aptamer. Anal. Chem. 84 (13): 5501-5508. Epub Jun 11. DOI: 10.1021/ac202427e.
33. Nübel U, Nitsche A, Layer F, Strommenger B, Witte W (2012): Single-nucleotide polymorphism genotyping identifies a locally endemic clone of Methicillin-Resistant Staphylococcus aureus. PLoS ONE 7 (3): e32698. doi:10.1371/journal.pone.0032698.
34. Pauli G, Bauerfeind U, Blümel J, Burger R, Drosten C, Gröner A, Gürtler L, Heiden M, Hildebrandt M, Jansen B, Montag-Lessing T, Offergeld R, et al. (2012): West-Nil-Virus. Bundesgesundheitsblatt – Gesundheitsforschung – Gesundheitsschutz 55 (8): 1024–1043. DOI 10.1007/s00103-012-1507-2.
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and Fractionated Electron Beam Irradiation on Enveloped and Non-Enveloped Viruses in a Tendon Transplant Model. Transfus. Med. Hemother. 39 (1): 29-35. Epub Jan 20. doi: 10.1159/000336380.

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37. Schultze D, Korte W, Rafeiner P, Niedrig M (2012): First report of sandfly fever virus infection imported from Malta into Switzerland, October 2011. Euro Surveill. 17 (27): pii=20209. Available online: http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20209.
38. Schwarzer H, Kurth A, Hermel M, Plange N (2012): Severe ulcerative keratitis in ocular cowpox infection. Graefes Arch. Clin. Exp. Ophthalmol.: Epub Aug 30. DOI: 10.1007/s00417-012-2138-x.
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5. Brief description of the biological defence work carried out at the facility, including types of micro-organisms and/or toxins studied, as well as outdoor studies of biological aerosols:

Within the Robert Koch Institute, the Centre for Biological Threats and Special Pathogens is the central institution for issues of biological security. Its main task is to strengthen public health preparedness and responses to unusual biological events with highly pathogenic agents that might be used with bioterrorist intent. ZBS develops concepts for identifying the causes for these events, especially diagnostic tools and capabilities for relevant pathogens and toxins. It performs scientific studies to enhance preparedness and response capacities, improve coordination and communication as well as tools and capabilities for crisis response.

The Centre for Biological Threats and Special Pathogens is divided into a Federal Information Centre for Biological Threats and Special Pathogens (Informationsstelle des Bundes für Biologische Gefahren und Spezielle Pathogene, IBBS) and six departments (ZBS 1-6). The departments are briefly described below. More information can be obtained on the RKI homepage: http://www.rki.de/EN/Content/Institute/DepartmentsUnits/CenterBioSafety/CenterBioSafety_node.html.

IBBS is not engaged in active laboratory-based research. It provides support for the public health sector regarding recognition, situation assessment and response to unusual biological events related to bioterrorism or any natural occurrence or accidental release of highly pathogenic agents. More information can be obtained using the following link: http://www.rki.de/EN/Content/Institute/DepartmentsUnits/CenterBioSafety/ibbs/ibbs_node.html.

ZBS1, the department for highly pathogenic viruses, develops, establishes and validates diagnostic methods for pathogens, in particular imported viruses and viruses with high pathogenicity. Detection methods include antigen-based techniques as well as rapid and sensitive nucleic acid-based methods for the identification, characterisation and differentiation of pathogens of high-risk groups. Research focuses on these pathogens in order to improve therapy and prophylactics as well as to study the mechanisms of pathogenesis of highly pathogenic viruses. ZBS1 aims also to develop strategies for combating and preventing infections with highly pathogenic viruses. Interlaboratory proficiency tests are carried out, reference samples, standards and materials for diagnostics are provided to other laboratories. Affiliated to ZBS1 are two Consultant Laboratories, for tick-borne encephalitis and pox viruses, respectively. More information can be obtained using the following link: http://www.rki.de/EN/Content/Institute/DepartmentsUnits/CenterBioSafety/zbs1/zbs1_node.html.

ZBS2 is the department for highly pathogenic microorganisms and focuses mainly on bacterial pathogens of high-risk groups. It provides special diagnostics for selected bacterial pathogens of risk groups 2 and 3 which could constitute biological threats. This includes also the laboratory analyses of suspected bioterrorism samples for bacterial threats and other agents in collaboration with other departments of ZBS. For suspect bacterial isolates including those from other parts of Germany, a confirmatory diagnostic is offered. The microbiological, molecular biological and immunological methods for the detection of bacteria in focus are continuously developed and optimized further. A main focus is the quality assurance of the diagnostic approaches for which the department is coordinating international activities and interlaboratory proficiency tests. A bacterial strain collection is maintained for the production of reference materials used in international and national proficiency tests. In addition, the department carries out research on questions of epidemiology and ecology, pathogenesis, and decontamination of selected high threat bacteria. For these activities, the department is running a BSL 3 laboratory. More information can be obtained using the following link: http://www.rki.de/EN/Content/Institute/DepartmentsUnits/CenterBioSafety/zbs2/zbs2_node.html.

ZBS3, the department for microbial toxins, develops and validates diagnostic tools and assays to detect relevant microbial and plant toxins. The technologies used are based on immunological, cell biological and functional parameters, as well as chromatographic methods and mass spectroscopy. Basic research is performed on the natural prevalence and variability of toxins and toxin subtypes. Furthermore, research on the pathogenesis of the diseases induced by toxins of interest is conducted and contributes to the development of standard therapies. ZBS3 also organizes interlaboratory proficiency tests to assure the quality of diagnostics and provides reference samples, reference bacterial strains and standards. Further information can be obtained using the following link: http://www.rki.de/EN/Content/Institute/DepartmentsUnits/CenterBioSafety/zbs3/zbs3_node.html.

ZBS4, the department for advanced light and electron microscopy, is responsible for the rapid detection of pathogens in environmental and patient samples by using electron microscopy. ZBS4 conducts interlaboratory proficiency tests to assure the quality of this particular diagnostic method. Research is focussed on bacterial endospores, biofilm and the improvement of diagnostic methods. Further information can be obtained using the following link: http://www.rki.de/EN/Content/Institute/DepartmentsUnits/CenterBioSafety/zbs4/zbs4_node.html.

ZBS5, the department for biosafety level 4 laboratory, is currently planning and setting up the biosafety level 4 laboratory at the RKI. Personnel will be employed during 2013. Opening of the laboratory is expected for 2015. ZBS5 will establish diagnostic methods for biosafety level 4 pathogens.

ZBS6, the department for proteomics and spectroscopy, develops Raman and infrared spectroscopy, MALDI-TOF for the rapid detection, identification and characterization of

highly pathogenic agents. Further information can be obtained by using the following link:
http://www.rki.de/EN/Content/Institute/DepartmentsUnits/CenterBioSafety/zbs6/zbs6_node.html.

A list of highly pathogenic biological agents and means of detection established and available at the ZBS can be obtained using the following link:
http://www.rki.de/DE/Content/Infekt/Biosicherheit/Diagnostik/Diagnostik-Details_Ueberblick_pdf.pdf?__blob=publicationFile.

The list includes *Bacillus anthracis, Brucella spp, Burkholderia mallei, Burkholderia pseudomallei, Chikungunya virus, Clostridium botulinum, Coxiella burnetii, Ebola virus, Venezuelan equine encephalitis virus, Francisella tularensis, Yellow fever virus, Guanarito virus, Hantaan virus, Junin virus, Crimean-Congo hemorrhagic fever virus, Lassa virus, Machupo virus, Marburg virus, Nipah virus, Omsk hemorrhagic fever virus, Rift Valley fever virus, ricin, Sabia virus, Staphylococcal enterotoxins, Variola major,* and *Yersinia pestis*. Please note that for several of the agents listed, only diagnostics are developed while no research on the pathogen itself is carried out, e.g. *smallpox* or *Marburg virus*.

Outdoor studies of biological aerosols have not been conducted.

Confidence-Building Measure "B"

Exchange of information on outbreaks of infectious diseases and similar occurrences caused by toxins

From 20 September through 5 October 2012, a large *Norovirus* outbreak occurred in five federal states of eastern Germany. It affected 390 institutions with nearly 11,000 patients. The majority were children in schools and nurseries. A common denominator among the institutions was catering by various regional kitchens of a large catering company. The proportion of patients needing hospitalisation was low; no deaths were reported. Epidemiological investigations identified frozen strawberries contained in various dishes as the most likely vehicle in this outbreak. Epidemiological evidence guided food safety investigations, which revealed that the strawberries were imported frozen from the People's Republic of China. This outbreak of gastrointestinal illness was the largest foodborne outbreak recorded in Germany to date.
A detailed report (in German) is available from:
http://www.rki.de/DE/Content/InfAZ/L/Lebensmittel/Gastroenteritis_Ausbruch_2012/Lagebericht_Ausbr_Noro-Gastro_09-10_2012.pdf.
A publication for an international audience is in preparation.

Under the OIE WAHIS/WAHID reporting system Germany in 2012 provided information about exceptional animal disease events regarding outbreaks of anthrax (*Bacillus anthracis*), low pathogen avian influenza (poultry) and *Schmallenberg-Virus*. Information can be obtained by using the following link:
www.oie.int/wahis/public.php?page=country_reports

Confidence-Building Measure "C"

Encouragement of publication of results and promotion of use of knowledge

Germany encourages scientist and scientific institutions to publish the results of research without any restrictions in scientific journals as well as presenting their work at national and international professional meetings. In sensitive research and development areas scientist and scientific institutions are advised to publish under peer review procedures.

The Robert Koch Institute as well as other German scientific and professional institutions signed the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities, available at http://oa.mpg.de/lang/en-uk/berlin-prozess/berliner-erklarung/

Germany announces the upcoming Medical Biodefense Conference 2013 to be held in Munich, Germany, October 22–25, 2013. Further information, including registration form can be found under www.biodefense2013.org