Revised forms for the submission of the Confidence-Building Measures

At the Third Review Conference it was agreed that all States Parties present the following declaration, later amended by the Seventh Review Conference:

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	X		
C	X		
E			
F		X	2014
G		X	2012

Date:

15th of April 2016

State Party to the Convention:

Sweden

Date of ratification/accession to the Convention:

5th of February 1976.

The Convention was signed by Sweden on the 27th of February 1975. It was ratified by Sweden on the 5th of February 1976 and entered into force for Sweden the same date.

National point of contact:

Department for Disarmament and Non-Proliferation, Ministry for Foreign Affairs of Sweden. E-mail: ud-nis@gov.se, Address: SE-103 39 Stockholm, telephone: +46 (0)8-405 10 00

Confidence-Building Measure "A"

Form A, part 1 (i)

Exchange of data on research centres and laboratories[1]

1. Name(s) of facility[2]

High Containment Laboratory, Public Health Agency of Sweden (The Swedish BSL4 laboratory)

2. Responsible public or private organization or company

Public Health Agency of Sweden

3. Location and postal address

Public Health Agency of Sweden, SE-17182 Solna, Sverige

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

The activities are financed through the Swedish Government (Ministry of Health and Social Affairs), and through governmental agencies such as Swedish Civil Contingencies Agency (MSB), National Board of Health, Swedish Research Council (VR) and partly by the EU (research funds and the Innovative Medicines Initiative and funding through Joint Actions within European Health Program).

5. Number of maximum containment units[3] **within the research centre and/or laboratory, with an indication of their respective size (m^2)**

Two separate BSL4 units enclosing three laboratories with a total area of 136 m^2.

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

The Public Health Agency of Sweden is a national expert authority with overall responsibility for public health issues at a national level. Our mission is to promote health, prevent illness and contribute to a sustainable society. There are no projects conducted related to biological defence, more than a strive to a better biological understanding of biological agents (see publication list related to BSL4 work below). The agency develops and maintain national diagnostic preparedness for highly pathogenic agents. Research results is published in international journals.

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[1] The containment units which are fixed patient treatment modules, integrated with laboratories, should be identified separately.

[2] For facilities with maximum containment units participating in the national biological defence research and development programme, please fill in name of facility and mark "Declared in accordance with Form A, part 2 (iii)".

[3] In accordance with the latest edition of the WHO Laboratory Biosafety Manual, or equivalent.

Public Health Agency of Sweden: publications in 2015 related to high containment laboratory activities:

Faye O, Faye O, Soropogui B, Patel P, El Wahed AA, Loucoubar C, Fall G, Kiory D, Magassouba N, Keita S, Kondé MK, Diallo AA, Koivogui L, Karlberg H, Mirazimi A, Nentwich O, Piepenburg O, Niedrig M, Weidmann M, Sall AA. **Development and deployment of a rapid recombinase polymerase amplification Ebola virus detection assay in Guinea in 2015.** *Euro Surveill. 2015;20(44). doi: 10.2807/1560-7917.ES.2015.20.44.30053. PMID: 26558690*

Algaar F, Eltzov E, Vdovenko MM, Sakharov IY, Fajs L, Weidmann M, Mirazimi A, Marks RS. **Fiber-optic immunosensor for detection of Crimean-Congo hemorrhagic fever IgG antibodies in patients**. *Anal Chem. 2015 Aug 18;87(16):8394-8. doi: 10.1021/acs.analchem.5b01728. Epub 2015 Jul 28.*
PMID: 26151547

Papa A, Weber F, Hewson R, Weidmann M, Koksal I, Korukluoglu G, Mirazimi A. **Meeting report: First International Conference on Crimean-Congo hemorrhagic fever.** *Antiviral Res. 2015 Aug;120:57-65. doi: 10.1016/j.antiviral.2015.05.005. Epub 2015 May 26. Review.*
PMID: 26022198

Karlberg H, Sharifi-Mood B, Mousavi-Jazi M, Dilcher M, Lindegren G, Mardani M, Bereskly S, Weidmann M, Mirazimi A. **Molecular and serological findings in suspected patients with Crimean-Congo hemorrhagic fever virus in Iran.** *J Med Virol. 2015 Apr;87(4):686-93. doi: 10.1002/jmv.24106. Epub 2015 Feb 3. PMID: 25649667*

Devignot S, Bergeron E, Nichol S, Mirazimi A, Weber F. **A virus-like particle system identifies the endonuclease domain of Crimean-Congo hemorrhagic fever virus.** *J Virol. 2015 Jun;89(11):5957-67. doi: 10.1128/JVI.03691-14. Epub 2015 Mar 25. PMID: 25810550*

Salata C, Baritussio A, Munegato D, Calistri A, Ha HR, Bigler L, Fabris F, Parolin C, Palù G, Mirazimi A. **Amiodarone and metabolite MDEA inhibit Ebola virus infection by interfering with the viral entry process.** *Pathog Dis. 2015 Jul;73(5). pii: ftv032. doi: 10.1093/femspd/ftv032. Epub 2015 Apr 30. PMID: 25933611*

Papa A, Mirazimi A, Köksal I, Estrada-Pena A, Feldmann H. **Recent advances in research on Crimean-Congo hemorrhagic fever.** *J Clin Virol. 2015 Mar;64:137-43. doi: 10.1016/j.jcv.2014.08.029. Epub 2014 Oct 22. Review*
PMID: 25453328

Alm E, Lindegren G, Falk KI, Lagerqvist N. **One-step real-time RT-PCR assays for serotyping dengue virus in clinical samples.** *BMC Infect Dis. 2015 Nov 2;15:493. doi: 10.1186/s12879-015-1226-z.*
PMID: 26527283

Bergqvist C, Holmström P, Lindegren G, Lagerqvist N, Leijon M, Falk KI. **Multiplex nucleic acid suspension bead arrays for detection and subtyping of filoviruses.** *J Clin Microbiol. 2015 Apr;53(4):1368-70. doi: 10.1128/JCM.02787-14. Epub 2015 Jan 28.*
PMID: 25631793

Alm E, Advani A, Bråve A, Wahab T. **Draft Genome Sequence of Strain R13-38 from a Francisella tularensis Outbreak in Sweden.** *Genome Announc. 2015 Feb 19;3(1). pii: e01517-14. doi: 10.1128/genomeA.01517-14.*
PMID: 25700401

Gudo ES, Pinto G, Vene S, Mandlaze A, Muianga AF, Cliff J, Falk K. **Serological Evidence of Chikungunya Virus among Acute Febrile Patients in Southern Mozambique.** *PLoS Negl Trop Dis. 2015 Oct 16;9(10):e0004146. doi: 10.1371/journal.pntd.0004146. e Collection 2015 Oct. PMID: 26473605*

Lasch P, Wahab T, Weil S, Pályi B, Tomaso H, Zange S, Kiland Granerud B, Drevinek M, Kokotovic B, Wittwer M, Pflüger V, Di Caro A, Stämmler M, Grunow R, Jacob D. **Identification of Highly Pathogenic Microorganisms by Matrix-Assisted Laser Desorption Ionization-Time of Flight Mass Spectrometry: Results of an Interlaboratory Ring Trial.** *J Clin Microbiol. 2015 Aug;53(8):2632-40. doi: 10.1128/JCM.00813-15. Epub 2015 Jun 10. PMID: 26063856*

Viegas SO, Ghebremichael S, Massawo L, Alberto M, Fernandes FC, Monteiro E, Couvin D, Matavele JM, Rastogi N, Correia-Neves M, Machado A, Carrilho C, Groenheit R, Källenius G, Koivula T. **Mycobacterium tuberculosis causing tuberculous lymphadenitis in Maputo, Mozambique.** *BMC Microbiol. 2015 Nov 21;15:268.*

Sturegård E, Ängeby KA, Werngren J, Juréen P, Kronvall G, Giske CG, Kahlmeter G, Schön T. **Little difference between minimum inhibitory concentrations of Mycobacterium tuberculosis wild-type organisms determined with BACTEC MGIT 960 and Middlebrook 7H10.** *Clin Microbiol Infect. 2015 Feb;21(2):148.e5-7.*

Sahebi L, Ansarin K, Hoffner S, Farajnia S, Seyyedi M, Khalili M, Monfaredan A. **Molecular Epidemiology of Mycobacterium Tuberculosis Strains in the North-West and West of Iran.** *Ann Med Health Sci Res. 2015 Sep-Oct;5(5):334-9.*

Merker M, Blin C, Mona S, Duforet-Frebourg N, Lecher S, Willery E, Blum MG, Rüsch-Gerdes S, Mokrousov I, Aleksic E, Allix-Béguec C, Antierens A, Augustynowicz-Kopeć E, Ballif M, Barletta F, Beck HP, Barry CE 3rd, Bonnet M, Borroni E, Campos-Herrero I, Cirillo D, Cox H, Crowe S, Crudu V, Diel R, Drobniewski F, Fauville-Dufaux M, Gagneux S, Ghebremichael S, Hanekom M, Hoffner S, Jiao WW, Kalon S, Kohl TA, Kontsevaya I, Lillebæk T, Maeda S, Nikolayevskyy V, Rasmussen M, Rastogi N, Samper S, Sanchez-Padilla E, Savic B, Shamputa IC, Shen A, Sng LH, Stakenas P, Toit K, Varaine F, Vukovic D, Wahl C, Warren R, Supply P, Niemann S, Wirth T. **Evolutionary history and global spread of the Mycobacterium tuberculosis Beijing lineage.** *Nat Genet. 2015 Mar;47(3):242-9.*

Wu L, Deng H, Zheng Y, Mansjö M, Zheng X, Hu Y, Xu B. **An association study of NRAMP1, VDR, MBL and their interaction with the susceptibility to tuberculosis in a Chinese population.** *Int J Infect Dis. 2015 Sep;38:129-35.*

Tagliani E, Cabibbe AM, Miotto P, Borroni E, Toro JC, Mansjö M, Hoffner S, Hillemann D, Zalutskaya A, Skrahina A, Cirillo DM. **Diagnostic Performance of the New Version (v2.0) of GenoType MTBDRsl Assay for Detection of Resistance to Fluoroquinolones and Second-Line Injectable Drugs: a Multicenter Study.** *J Clin Microbiol. 2015 Sep;53(9):2961-9.*

Balabanova Y, Nikolayevskyy V, Ignatyeva O, Kontsevaya I, Mironova S, Kovalyov A, Kritsky A, Rodionova Y, Fedorin I, Casali N, Hooper R, Horstmann RD, Nejentsev S, Hoffner S, Nuernberg P, Drobniewski F. **Beijing clades of Mycobacterium tuberculosis are associated with differential survival in HIV-negative Russian patients.** *Infect Genet Evol. 2015 Dec;36:517-23.*

Cambau E, Viveiros M, Machado D, Raskine L, Ritter C, Tortoli E, Matthys V, Hoffner S, Richter E, Perez Del Molino ML, Cirillo DM, van Soolingen D, Böttger EC. **Revisiting susceptibility testing in MDR-TB by a standardized quantitative phenotypic assessment in a European multicentre study.** *J Antimicrob Chemother. 2015 Mar;70(3):686-96.*

Risk group 4 agents

In the BSL4 containment units diagnostics and research regarding the following viruses are performed: Bunyavirus, Flavivirus, Arenavirus, Paramyxovirus, Filovirus, SARS-CoV and highly pathogenic avian influenza virus. Special emphasis is directed towards the Crimean-Congo haemorrhagic fever virus (CCHFV) and Ebola virus.

Methods for identification

Standard methods are used for identification of these microorganisms. Methods in use include molecular biological methods (including novel high throughput/high capacity methods), serological methods such as neutralization assays, cultivation and electron microscopy. The quality of diagnostic methods for many of the pathogens is assured through participation in quality assurance exercises and ring trials within international EC-funded networks.

The general goals are to improve laboratory diagnostics, laboratory capacity and basic knowledge of highly pathogenic agents. This includes the development of platforms for broad, efficient and reliable diagnostic methods, studies of virulence and pathogenesis and the establishment and use of animal models for use in diagnostics, treatment and vaccine development.

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.**

Methods are developed for detection, identification and analysis of bacteria, viruses and toxins, and for prediction and management of consequences of potential biologic agent release. Field trial capacity for outdoor biological detection is established in order to successfully evaluate B-detection instruments using BW-simulants and occasionally to train military personnel in using biodetection equipment.

More specifically:
Analysis of biological agents and toxins

The R&D activities focus on development of sampling, preparation of mixed CBRN samples, and rapid identification methods for biothreat agents. The analysis methods are based primarily on different types of DNA and RNA methods, and to some extent on immunological methods.

Also high-resolution genomic forensic analysis of biothreat pathogenic agents for verification purposes is performed. In this context, statistical frameworks for calculation of evidence values for attribution purposes are developed. The scientific research focuses on understanding the movement of pathogens and associated diseases through a population and geography (epidemiology), and the changes associated with the propagation of pathogens over time (evolution). The toxin analysis research involves development of sensitive methods for toxin preparation and mass spectrometry detection of protein toxins as ricin and Botulinum neurotoxins. In addition, chemical analytical methods for paralytic shellfish toxins are developed, with an emphasis on forensic methods.

These activities are funded by the Ministry of Defence (8,7 MSEK), the Ministry of Foreign Affairs (4.1 MSEK), the Swedish Civil Contingencies Agency (4.9 MSEK), the Swedish defence material administration (0.4 MSEK), and the European Defence Agency (1.0 MSEK)

Detection of B-agents

Here the objective is to discover the presence of health threatening levels of B substances in the air (Alerting), before they have negative impact on mission effectiveness, and provide timely information which will permit forces to adopt an appropriate level of individual and collective protection (Warning). The need for close to real-time, automatic measurements excludes the requirement for characterisation of the hazard substances.

The research in the area has been focused on Laser Induced Fluorescence spectroscopy (LIF), Laser Induced Breakdown Spectroscopy (LIBS). The LIF system is used to measure spectral signatures from different biological aerosol (Simili substances) and different data extraction/classification algorithms is evaluated. Test and evaluation facilities are developed in order to continuously evaluate the different steps of the biodetector development and also to be able to evaluate commercial biodetectors.

Together with the Swedish Armed Forces National CBRN Defence Centre, Umeå, development of a specific outdoor facility suitable for large scale field trials has been performed. In this facility bioaerosols of simulant agents can be studied under field conditions and field trials with participants from many

different countries are regularly arranged at this facility. During 2015, no such biological field trial was performed.

Standardisation issues regarding the testing and evaluation of biological detectors has been performed within an EDA Ad Hoc Cat B-project "T&E BioDIM" (finished jan 2015). A phase 2 part is under planning.

The B-detection activities are mainly funded by the Ministry of Defence (4.0 MSEK)

Environmental fate of potential biological warfare agents

This project investigates the properties of potential biological warfare agents with relevance for persistence in the environment, potential further dispersal and potential maintenance of virulence, using Francisella tularensis spp. as model organisms. Virulence properties are evaluated in cell and animal infection models. The objective is to increase the understanding of the environmental fate of the organism after, for instance, a deliberate or accidental release of the pathogen in a specific milieu. Such knowledge will in turn provide a basis for related threat and risk assessments for civilian preparedness.

These activities are funded by the Ministry of Defence (5.2 MSEK) and Swedish Civil Contingencies Agency (0.4 MSEK), private companies (0.5 MSEK), European Union (1 MSEK), and research grants (0.2 MSEK).

Decontamination of highly pathogenic biological warfare agents

Research applied in this project concerns decontamination of highly pathogenic biological warfare agents. Studies are performed on traditional forensic traces, i.e. DNA, finger marks and electronic devices where these trace classes have been chosen as they have the potential to directly lead to individuals of interest in an investigation. The objective is to evaluate decontamination efficiency of the forensic traces contaminated with biological agents.

These activities are funded by European Commission 0,4 MSEK

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

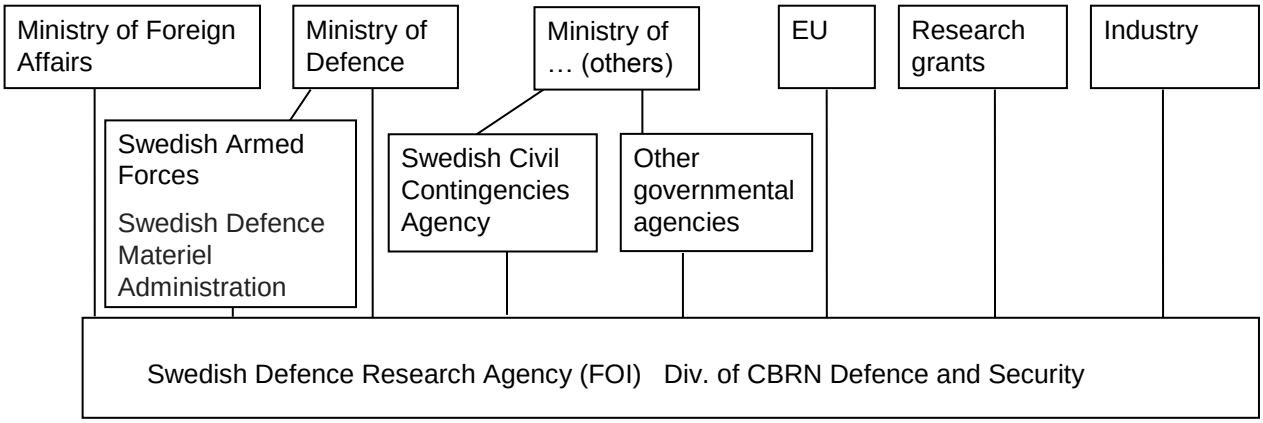
The funding for each programme is specified under #1.

Total funding:	**31.2 MSEK**
Ministry of Defence	(17.9 MSEK)
- Swedish Civil Contingencies Agency	(5.3 MSEK)
- Swedish Defence Material Administration	(0.4 MSEK)
Ministry of Foreign Affairs	(4.1 MSEK)
European Commission/EDA	(2.4 MSEK)
Research grants, industry	(1.1 MSEK)

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

No

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



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.**

Form A, part 2 (iii)

National biological defence research and development programmes

Facilities

Facility 1: The Swedish Defence Research Agency (FOI)

1. **What is the name of the facility?**

Swedish Defence Research Agency (FOI), Division of CBRN Defence and Security

2. **Where is it located (include both address and geographical location)?**

Cementvägen 20, SE-901 82 UMEÅ, Sweden

3. **Floor area of laboratory areas by containment level:**

BSL2 515 (sqM)

BSL3 74 (sqM)

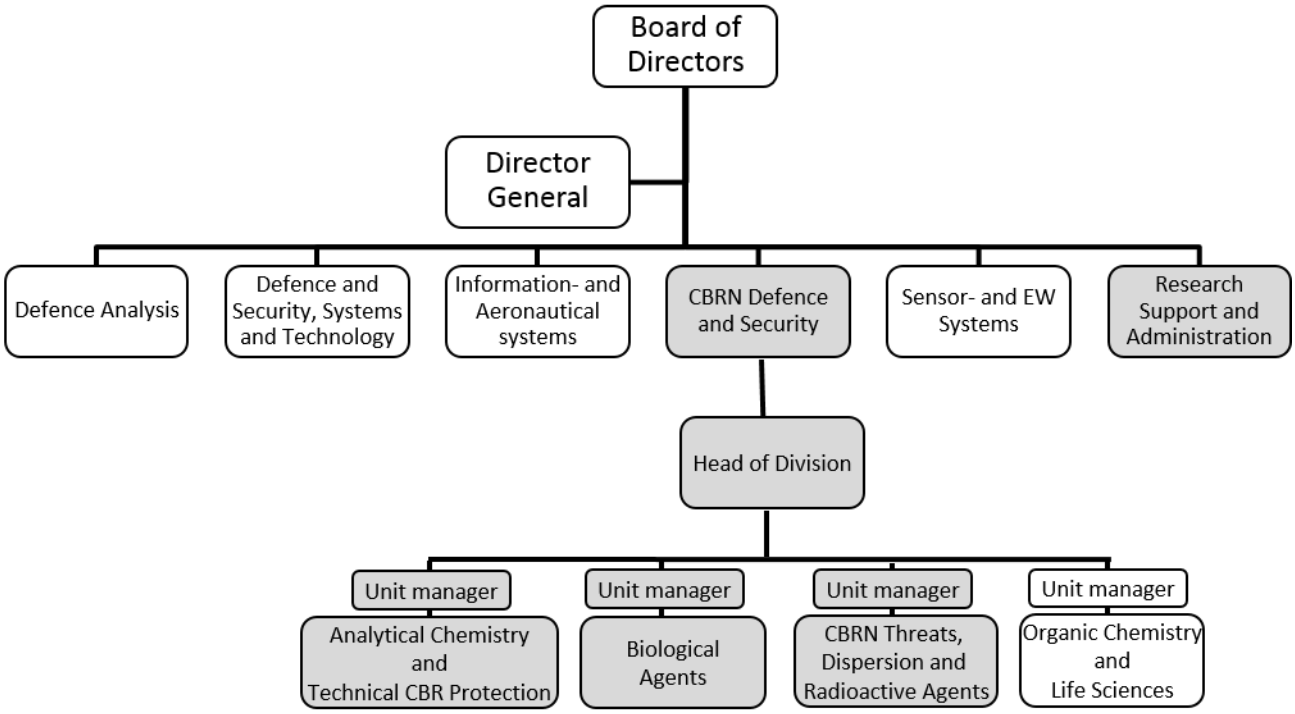
BSL4 0 (sqM)

Total laboratory floor area 589 (sqM)

3. **The organizational structure of each facility.**

Organisational Structure of FOI

(Departments contributing to the Biological Defence Programme are shown in grey)



(i)	Total number of personnel	32
(ii)	Division of personnel:	
	Military	0
	Civilian	32
(iii)	Division of (permanent) personnel by category:	
	Scientists	21
	Engineers	7
	Technicians	2
	Administrative and support staff	2

(iv) **List the scientific disciplines represented in the scientific/engineering staff.**

Physics, analytical chemistry, chemistry, biophysical chemistry, bacteriology, virology, genetics, immunology, medicine, microbiology, biochemistry, molecular biology, ecology, forensic science, bioinformatics, toxicology, veterinary medicine, and mathematics.

(v) **Are contractor staff working in the facility? If so, provide an approximate number**.

Yes, a small number of contractors work in the facility occasionally. Other contractor staff carries out building and maintenance work.

(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?**

FOI CBRN Defence and Security receives funding from the Ministry of Defence, the Swedish Defence Materiel Administration, the Swedish Civil Contingencies Agency, the Ministry of Foreign Affairs, the European Union, research grants and from commercial companies.

(vii) **What are the funding levels for the following programme areas:**

Research	40%
Development	40%
Test and evaluation	20%

(viii) **Briefly describe the publication policy of the facility:**

The recommendation for publication at the Swedish Defence Research Agency, is to publish results of biological research in international peer review journals. Some results are published as publicly available FOI-reports. Reprints of scientific papers and FOI-reports can be requested from: Swedish Defence Research Agency, SE-901 82 Umeå, Sweden.

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

A. Larsson, H. Andersson, L. Landström, **Impact of data reduction on multivariate classification models built on spectral data from bio-samples**, *Journal of Analytical and Atomic Spectrometry*, (2015) vol 30, s.1117-1127, DOI: 10.1039/C4JA00467A

P. Jonsson, P. Wästerby, P.Å. Gradmark, J. Hedborg, A. Larsson, L. Landström, **Bioaerosol detection and classification using dual excitation wavelength laser-induced fluorescence,** *Proc. SPIE 9455, Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE) Sensing XVI*, 945509 (2015); doi: 10.1117/12.2176744

E. M. Fykse, T. Tjärnhage, T. Humppi, V. Sørvik Eggen, A. Ingebretsen, G. Skogan, G. Olofsson, P. Wästerby, P. Å. Gradmark, A. Larsson, M. Dybwad, J. M. Blatny, **Identification of airborne bacteria by 16S rDNAsequencing, MALDI-TOF MS and the MIDI microbial identification system**, *Aerobiologia* (2015) 31:271–281, FOI-S--5202—SE. doi: 10.1007/s10453-015-9363-9

M. Sidstedt L. Jansson, E. Nilsson, L. Noppa, M. Forsman, P. Rådström, J. Hedman.; **Humic substances cause fluorescence inhibition in real-time polymerase chain reaction**. *Analytical Biochemistry* 487 (2015) 30–37. doi: 10.1016/j.ab.2015.07.002

C. Björn, L. Noppa, E. Näslund Salomonsson, A.L. Johansson, E. Nilsson, M. Mahlapuu, J. Håkansson. **Efficacy and safety profile of the novel antimicrobial peptide PXL150 in a mouse model of infected burn wounds**. *International Journal of Antimicrobial Agents*, vol 45, s.519-524, (2015). doi: 10.1016/j.ijantimicag.2014.12.015.

S. Bäckman, J. Näslund, M. Forsman, J. Thelaus. **Transmission of tularemia from a water source by transstadial maintenance in a mosquito vector**; *Scientific Reports,* (2015), vol 5, 7793, s.1-4, doi: 10.1038/srep07793

S. Sissonen, H. Rossow, E. Karlsson, H. Hemmilä, H. Henttonen, M. Isomursu, P. M. Kinnunen, K. Pelkola, S. Pelkonen, E. Tarkka, K. Myrtennäs, S. Nikkari, M. Forsman. **Phylogeography of *Francisella tularensis* subspecies holarctica in Finland, 1993–2011,** *Journal of Infectious Diseases,* (2015), 47 (10), 701-706. doi: 10.3109/23744235.2015.1049657.

E. Karlsson, A. Lärkeryd, A. Sjödin, M Forsman, P. Stenberg, **Scaffolding of a bacterial genome using MinION nanopore sequencing**, *Sci Rep*. vol 5:11996 (2015) doi: 10.1038/srep11996

P Otto, R Kohlmann, W Müller, S Julich, G Geis, SG Gatermann, M Peters, P.J. Wolf, E. Karlsson, M. Forsman, K. Myrtennäs, H. Tomaso, **Hare-to-Human Transmission of *Francisella tularensis* subsp. *holarctic*a, Germany**... *Emerg infect dis* (2015), 21 (1), 153, doi: 10.3201/eid2101.131837.

Y Özsürekci, DN Birdsell, M Çelik, E Karadağ-Öncel, A Johansson M. Forsman, A.J. Vogler, P. Keim; M. Ceyhhan, D.M. Wagner. **Diverse *Francisella tularensis* strains and oropharyngeal tularemia, Turkey,** *Emerg Infect Dis* (2015), 21 (1), 173-175doi: 10.3201/eid2101.141087

D Svensson, C Öhrman, S Bäckman, E Karlsson, E Nilsson, M Byström, A. Lärkeryd, K. Myrtennäs, P. Stenberg, P.H. Qu, J. Trygg, H.C. Scholz, M. Forsman, A. Sjödin. **Complete genome sequence of *Francisella guangzhouensis* strain 08HL01032T, isolated from air-conditioning systems in China** *Genome announc.*(2015), 3 (2), e00024-15 doi: 10.1128/genomeA.00024-15

A.L. Johansson, L. Noppa, E. Näslund Salomonsson, Å. Forsberg. Molecular Medical Microbiology, 2nd edition, vol. 3. ***Fransicella*** Chapter 108. (2015) Elsevier Ltd., ISBN: 978-0-12-801241-3

J. Ahlinder, A. Nordgaard, S. Wiklund Lindström, **Chemometrics comes to court : evidence evaluation of chem-bio threat agent attacks** *Journal of Chemometrics*, (2015) 29(5).267-276

JE Afset, KW Larssen, K Bergh, A Larkeryd, A Sjodin, A Johansson, M. Forsman
Phylogeographical pattern of *Francisella tularensis* in a nationwide outbreak of tularaemia in Norway, 2011; *Euro Surveill* (2015), 20, 9-14

A Karadenizli, M Forsman, H Şimşek, M Taner, C Öhrman, K Myrtennäs, A. Lärkeryd, A. Johansson, L. Özdemir, A. Sjödin. **Genomic analyses of *Francisella tularensis* strains confirm disease transmission from drinking water sources, Turkey, 2008, 2009 and 2012;** *Euro Surveill*, (2015), 20, 21136

A. Macellaro, L. Karlsson, E. Emmoth, I. Dergel, G. Metreveli, U. Allard Bengtsson, M. Byström, C. Hultén, A.L. Johansson. **Evaluation of Biological Indicator Spores as Tools for Assessment of Fumigation Decontamination Effectiveness**. *Applied Biosafety*, (2015), 20(4), s. 183-191, doi: 10.1177/153567601502000404

Lwande OW, Obanda V, Bucht G, Mosomtai G, Otieno V, Ahlm C, Evander M. **Global emergence of Alphaviruses that cause arthritis in humans**. *Infect Ecol Epidemiol*. (2015) Dec 18;5:29853. doi: 10.3402/iee.v5.29853.

Engdahl C, Knutsson S, Fredriksson SÅ, Linusson A, Bucht G, Ekström F. **Acetylcholinesterases from the Disease Vectors Aedes aegypti and Anopheles gambiae: Functional Characterization and Comparisons with Vertebrate Orthologues**. *PLoS One*. (2015);10(10):e0138598. doi: 10.1371/journal.pone.0138598.

Bergqvist J, Forsman O, Larsson P, Näslund J, Lilja T, Engdahl C, Lindström A, Gylfe Å, Ahlm C, Evander M, Bucht G. **Detection and isolation of Sindbis virus from mosquitoes captured during an outbreak in Sweden**, 2013. *Vector Borne Zoonotic Dis*. (2015);15(2):133-40. doi: 10.1089/vbz.2014.1717.

Fredriksson, Artursson, Bergström, Östin, Nilsson and Åstot. **Identification of RIP-II toxins by affinity enrichment enzymatic digestion and LC-MS.** *Analytical Chemistry*, (2015), 87(2): 967-974.

Bergström, Fredriksson, Nilsson and Åstot. **Deamidation in ricin studied by capillary zone electrophoresis- and liquid chromatography- mass spectrometry.** *J Chromatography B*, (2015), 974: 109-117.

5. **Briefly describe the biological defence work carried out at the facility, including type(s) of micro-organisms[4] and/or toxins studied, as well as outdoor studies of biological aerosols.**

FOI CBRN Defence and Security provides expert knowledge of biological and toxic agents which is highly relevant to the performance of the Ministry of Defence, the Ministry for Foreign Affairs and to the civilian community. The division pursues development of rapid molecular identification tools for the Swedish Armed Forces and civil preparedness agencies. The division also provides high-resolution genomic forensic analysis of biothreat agents, for verification purposes, and maintains reference collections of biothreat agents and related strains and species, investigates the ecology, epidemiology and evolution of model pathogens. On occasion evaluation of novel therapeutics on behalf of external customers is performed. Other activities include detection of B-agents in order to discover the presence of health threatening levels of B substances, before they have negative impact on mission effectiveness and provide timely information which will permit forces to adopt an appropriate level of individual and collective protection. The institute is also building and maintaining competence in the area of biological risk and threat assessments for civilian preparedness.

[4] Including viruses and prions.

Facility 2: The National Veterinary Institute (SVA)

1. **What is the name of the facility?**

National Veterinary Institute (SVA)

2. **Where is it located (include both address and geographical location)?**

Ulls väg 2B, SE-751 89, UPPSALA, Sweden

3. **Floor area of laboratory areas by containment level:**

BL2	approx: 10. 000 (sqM)
BL3	approx: 457 (sqM). Summary of the different BL3 lab 1 and 2: 218 (sqM), BL3 lab 4 72 (sqM), High inf. Lab: 58,3 (sqM), EHEC lab: 36,6 (sqM), TSE-lab 72 (sqM). A glovebox is also installed in one of the BL3 labs.
Total laboratory floor area	10 457 (sqM)

4. **The organizational structure of each facility.**

(i) Total number of personnel	353
(ii) Division of personnel:	
Military	0
Civilian	353
(iii) Division of personnel (permanent) by category:	
Scientists	54
Engineers	84 (veterinarians)
Technicians	87
Administrative and support staff	128

(iv) **List the scientific disciplines represented in the scientific/engineering staff.**

Bacteriology, Epidemiology, Feed, Immunobiology, Parasitology, Pathology, Pharmacology, Statistics, Toxicology, Virology,

All within the veterinary medicine area.

(v) **Are contractor staff working in the facility? If so, provide an approximate number**.

No

(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?**

Swedish Civil Contingencies Agency

(vii) **What are the funding levels for the following programme areas:**

Research & Development 48,2 million SEK

Development

Test and evaluation

(viii) **Briefly describe the publication policy of the facility:**

Policies and press releases are coordinated by the department of communication. Submitting scientific publications or accepting invitations to give oral presentations in case there is a security concern are discussed internally.

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

The latest scientific publications from SVA can be found at:

http://www.sva.se/forskning-och-utveckling/vetenskapliga-publikationer

5. **Briefly describe the biological defence work carried out at the facility, including type(s) of micro-organisms[5] and/or toxins studied, as well as outdoor studies of biological aerosols.**

On-going biological research projects at SVA during 2015 can be found at:

http://www.sva.se/en/Research/Researches/

[5] Including viruses and prions.

Confidence-Building Measure "B"

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

Exchange of data on outbreaks that seem to deviate from the normal pattern

Form B

Nothing to declare. The Public Health Agency does not have any deviating outbreaks to report during 2015. Swedish Board of Agriculture has not noted any outbreaks concerning infectious animal deceases or similar occurrences caused by toxins, which deviates from the normal pattern.

Confidence-Building Measure "C"

(Nothing to declare)

Confidence-Building Measure "D"

(Deleted)

Confidence-Building Measure "E"

Form E

Declaration of legislation, regulations and other measures

Relating to	Legislation	Regulations	Other measures[6]	Amended since last year
(a) Development, production stockpiling, acquisition or retention of microbial or other biological agents, or toxins, weapons, equipment and means of delivery specified in Article I	Yes	Yes	Yes	No
(b) Exports of micro-organisms[7] and toxins	Yes	Yes	Yes	No
(c) Imports of micro-organisms[11] and toxins	Yes	Yes	Yes	No
(d) Biosafety[8] and biosecurity[9]	Yes	Yes	Yes	No

[6] Including guidelines.
[7] Micro-organisms pathogenic to man, animals and plants in accordance with the Convention.
[8] In accordance with the latest version of the WHO Laboratory Biosafety Manual or equivalent national or international guidance.
[9] In accordance with the latest version of the WHO Laboratory Biosecurity Guidance or equivalent national or international guidance.

Confidence-Building Measure "F"

Declaration of past activities in offensive and/or defensive biological research and development programmes

(Nothing new to declare)

Form F

Declaration of past activities in offensive and/or defensive biological research and development programmes

1. **Date of entry into force of the Convention for the State Party.**

The Convention was signed by Sweden on the 27 February 1975. It was ratified by Sweden on the 5 February 1976 and entered into force for Sweden the same date. The text of the Convention is published in the Swedish Treaty Series, SÖ 1976:18.

2. **Past offensive biological research and development programmes:**

No

3. **Past defensive biological research and development programmes:**

Yes

Period(s) of activities

1960 to present

Confidence-Building Measure "G"

Form G

Declaration of vaccine production facilities

1. Name of facility:

Valneva Sweden AB.(Former Crucell Sweden AB)

2. Location (mailing address):

Location (mailing address):: SE-105 21 Stockholm, Sweden

3. General description of the types of diseases covered:

Diarrhoea, ETEC/Cholerae, inactivated Sabine polio virus strains (Type 1, Type 2, Type 3)