



REPORT

(February 2019)

**T5.1 The TESS center
specific domain of applicability**



1. Introduction

TESS (Training & Education in Safety & Security) Center represents one of the most important outcomes of the ERASMUS+ ImprESS project. It is assigned to ATRISC under the WP 5 and its main purpose is the development of capacities in HEI in Serbia for performing simulation exercises of different types.

Under the project, it is expected from participants to cover at least 5 risks (S&S challenges) by using simulation exercises. Participants are the most interested in:

1. Floods
2. Crowd Control
3. Counter terrorism
4. Cyber Attacks & Responses
5. Migration control
6. Traffic incidents*
7. Firefighting*

* XVR software (planned for procurement) also provide opportunity for these two security risks

2. Organization

TESS Center consists of one joint managing body (JMB) and 3 main labs.

The labs are sited in the institutions:

1. University of Defense in Belgrade (UNID)
2. University of Criminal Investigation and Police Studies (UCPS)
3. Faculty of Security Studies (FSS)

Joint managing body consists of representatives from participating institutions. It is responsible for:

1. making annual plan for simulation exercises in TESS center



2. coordinating of usage of TESS center capacities between participants (HEI)
3. disseminating of information about simulation exercises to the participants (e.g. reports)
4. making proposals for further development of TESS center

TESS Center Labs consist of:

1. necessary space (e.g. classroom(s) and / or hall(s))
2. computers & networking equipment
3. lab staff (2 persons MIN)
 - technician – responsible for
 - maintenance of space and equipment,
 - proper work of equipment
 - simulation expert(s) – trained & high skilled person(s) responsible for
 - making scenarios,
 - maps / terrain preparations, and
 - changing of course of actions according to teacher's demands

3. TESS Center Basic Documents

For TESS Center establishment and for its sustainability after the project ends, next documents should be made and signed:

1. Multilateral contract between three main HEI – TESS Center stakeholders
 - University of Defense in Belgrade (UNID)
 - University of Criminal Investigation & Police Studies (UCIPS)
 - Faculty of Security Studies, University of Belgrade (FSSBU)



With Steinbeis Institute in Kragujevac (SBIKG) interested partners should sign the bilateral contracts as the simulations they offer are designed for individual research work; moreover, these simulations are provided in different way (remote access).

2. Establishing document (necessary for sustainability after the project)
3. Contracts between HEI – project participants interested in TESS Center simulations can sign the bilateral contracts.
4. TESS Center Organization document (regulations for all aspects of TESS Center)
5. Handbook for Simulation Exercise Preparations (important information and simulation exercise development methodology for teachers)
6. Annual Simulations Exercises Plan Template
7. Annual Simulations Exercises Report Template
8. Simulation Exercise Elaborate – 5 documents for 5 simulation exercises tasked by the ImprESS project
9. Additional documents necessary for preparing, organizing, executing and analyzing of different simulation exercise types.

4. LRS Matrix

Next table shows LRS (lab / risk / software) matrix. It is obvious that more than five security risks are covered (participant are tasked for at least five). Green colored simulations will be held residentially, in the labs, while pink colored will be held distantly.

The simulation exercises in TESS Center labs can be performed in three ways:

1. Virtual simulation exercises – they cover individual / group / small team training in virtual space; this space is observable over the display or 3D glasses (e.g. Oculus) and it is very similar to real one;
2. Constructive simulation exercises – they are designed to provide team training at operations level, covering big areas and including lot of entities of different types; for instance, they fit the training of crisis staffs with subject matter experts from different areas – medical staff, police and military units, company staffs etc.;
3. Cyber simulation exercises – these are specific type of exercise as they happened

in so called cyber space; they are dedicated for individual / small team training in area of cyber-attack / detection / defense.

Steinbeis KG will provide the equipment and Internet access permanently. This way, the other participants can remotely perform their researches in area of Water pollution and Material fracture & failure. Other words, there will be no need to come in to institute. Table 1 is showing risks covered with software.

Table 1. Risks covered with software in TESS center

	SITES OF THE DISTRIBUTED SIMULATION CETRE			
	UCIPS	University of Defense	Faculty of Security Studies	Steinbeiss KG
RISKS COVERED				
Cyber attack	Forensic software (EnCase V8); Discrete Event Simulation software for generating representative cyber-attack; Arena; Skybox			
Fire	XVR software Instructor On Scene License – 2 permanent; XVR software On Scene Participant License - permanent and add on,	JANUS 11	XVR software Instructor On Scene License - 5 permanent; XVR software On Scene Participant License - permanent and add on,	
Flood		VBS-3 (Bohemia Interactive)		
Crowd Control				
Migration Management				
Traffic accidents				
Industrial accidents				
Crisis Media			XVR software Instructor Crisis Media Simulator License - permanent	
Terrorist attack		VBS-3 (Bohemia Interactive)		
Water pollution				(Lizza PAKP) Software for simulation and modelling of water flow; (FEMAP) Advanced engineering simulation software
Material fracture and failure				(FEMAP) Advanced engineering simulation software; (ABAQUS) Simulation software for structural finite element modelling

Table 2 shows initial matrix of HEI, potential subjects and simulation exercise types that can be used for. You can noticed that the simulation exercises can be used as a part of student praxis.

Table 2. List of curses and related software - draft

Institution	Subject/Course	Simulation Exercise	Remarks
UNID	Modeling of Threats	Counter Terrorism	Virtual simulations, VBS3 software, <=22 trainees
		Flooding	Constructive simulations, JanusFr.11 software, <=30tns
		Cyber Attack	Cyber Attack Simulations, Kali Linux
	Risk Management in Crisis Management	Immigrants protection	Virtual simulations, VBS3, <=22tns
		Crowd Control	Virtual simulations, VBS3, <=220tns
	Logistics for Crysis Management	Logistic support during natural/artificial disaster response	Constructive simulations, Janus Fr11, <=30tns
UCIPS	Quality Management	Cyber Attacks	Cyber Attack Simulations, Kali Linux EnCase V8, 5 licenses
	Geospatial Information in risk assessment	Border (immigrants) protection	-DJI Simulator Enterprise Software, - 1 license
	Occupational Safety and Health	Fire fighting	XVR, team setup - 2 students licenses
FSS	Student Praxis	Crowd Control	Virtual simulations, XVR, team setup - 5 students licenses
	Student Praxis	Crisis Management	Virtual simulations, XVR, team setup - 5 students licenses

5. Capacity Development Timeline

Proposed timeline is shown on the diagram below (Figure 2). It is developed according to instructions given by acting coordinator and overall project plan. The production of necessary documents (see Section 3) will start immediately after the approval of project continuation. The target date for this activity is 30 April. It is optimistically estimated, that means the final drafts should be made, approved by participants and ready for signing until that date.

The documents enlisted as 1, 2 and 3 (Section 3) should be signed ASAP and no later than July 31 2019. The document 4 (Section 3) should be finished before this time. The documents enlisted as 5, 6 and 7 (Section 3) should be finished before September 01 2019.

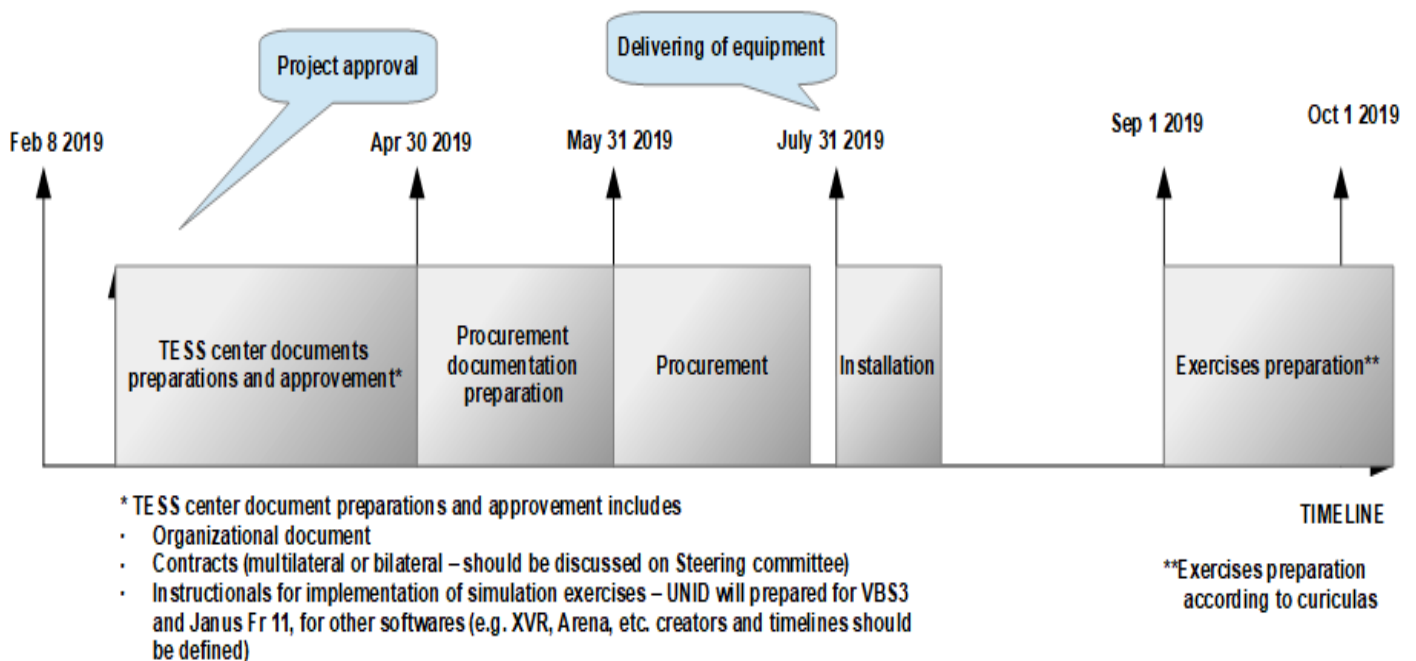


Figure 2: TESS Center development timeline

As the documents 8 and 9 (Section 3) are related to concrete simulation exercise, they have to be prepared at least 2 days before simulation exercise.



6. Closing Remarks

This is the 2nd draft of TESS Center Development (Implementation) plan. It has a purpose to inform interested sides about the ImprESS consortium intentions to achieve this very important task mandated under the project.

On the other hand, this document gives the orientation to the interested sides to focus their intentions on the common interests during the project.

This document was written by Goran Šimić, team leader of University of Defense - leading institution in development of TESS Center.

Issuing date February 21 2019.