

STAMINA bilateral telco IVN – EXUS

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PROJECT	STAMINA
EDITOR	[IVN-Ro]

SUBJECT	Bilateral telco IVN - EXUS on Early Warning System tool
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TOPICS DISCUSSED

General

- IVN:
 - brief presentation of the meeting purpose: clarifications on the possibilities of integration the Early Warning System tool (EWS) in the Romanian Trial executed as a table top exercise;
 - short presentation of the scenario after which the trial IVN-Ro takes place;
 - brief presentation of IVN-Ro understanding about EWS tool;
 - asking questions about the EWS tool.
- EXUS:
 - short presentation of the EWS tool and the possibilities of using it in a trial executed as a table top exercise;
 - explanations/answers/discussion on the simulation options with the EWS tool;
 - identification of the EWS tool needs/requirements for Ro trial.

Trial IVN-Ro scenario

The IVN-Ro trial scenario refers to the outbreak of an influenza pandemic with a highly pathogenic strain in a Romanian county, in which the number of suspects, hospitalized, intubated and deceased increases very rapidly in relation to a normal situation. This pandemic situation is managed within the legislation in force (baseline) and as a variant within the STAMINA instruments (innovative line). IVN-Ro trial was designed as a table top exercise. For the trial IVN-Ro team selected 10 STAMINA tools, among them being the EWS tool.

IVN-Ro understanding about EWS tool

IVN-Ro has very little information about EWS tool. IVN-Ro has assumed that EWS includes epidemic information from Web and Social Media Analytics (WSMA), Data Management and

Harmonization Tool (DMHT), SmarKo device and Flu and Corona virus Simulator (FACS). Also, IVN-Ro assumes that the exits/outputs from EWS are warnings and alarms, according to the rules implemented in the logical mechanism of WSMA (probably Machine Learning module). These warnings and alerts are sent to CrisisHub and EMT tools. For IVN-Ro team is important to know how this tool can be tested in the conditions of a trial performed as a table top exercise, having the scenario presented above.

EWS tool by short

EWS is a backend tool, does not provide a user interface to be run by the end user (user), we offer it as a service or something like this. End user will not be able to run EWS.

Questions asked and answers received

Q1: We understand that for this tool you need input from us to run this tool. Can you tell us what kind of data do you need, because we want to know what data we will collect?

A1: In EWS there are several modules, 2 of them being more important:

1. *Rule base engine* – this one is receiving data from SmarKo device and can also receive another inputs related with the predefined rules by you; you need to specify the daily no. of deaths related to the pathogen in question, updates for specific measurements that we will process for the established thresholds on the basis of which we report / issue warnings / alerts.
2. *Machine Learning (ML)* – for this we must have something similar to the defined rules, but we need estimates for the future. Will be an estimate for cases of influenza a few days later (e.g. 7 days), for cases of hospitalization, from a set of historical data for 1 year, 2 years to provide us to make predictions based on the situation presented for 7 days after. We need no. of new diseases in the next 7 days, information on cases reported by hospitalized and other data that is collected in the case of this pathogen (flu). These results will go to CrisisHub or EMT, wherever you want, where you find it useful.

For your trial you have selected SmaKo and WSMA. Rule base engine will be responsible for setting alerts The SmarKo device reads vital signs continuously, which it posts in back into the rule engine. For SmarKo thresholds must be set (these are fixed by BioMCS; for thresholds talk to them). For WSMA to discuss with Squaredav + TRI because they have contributions to the tool. We are interested in the data you sent to INTRA for DMHT.

Q2: What information do you need from IVN to run EWS? Is it necessary to have many SmarKo devices in the case of a table top or is one device enough?

A2: Rule base engine does not require previous data to run, only ML needs data. With what we have now about Covid in Romania we can make predictions for a week about Covid. For the flu we need records for a few months to be able to run ML. The other module receives data from other devices.

Warning / Alerts are given on each SmarKo device. If we have only one device we can issue alerts / warnings for it. If there are more, we can issue alerts on each device.

Connection with WSMA and SmarKo does not require changes in EWS. It is configured by the technical partners. SmarKo can be simulated; no matter how many devices. If we involve ML tool the discussion expands; daily epidemic data are needed for extract information for statistics.

Q3: Is it possible to have a simulation in the coming months before the Romanian trial DR2?

A3: We can test for simulation. We discussed with Patrick what the messages are based on data about Covid-Ro. As you know, there are some technical issues that need to be developed, but in your case there are no problems. We can set up a simulation meeting. This trial will be executed as a table top exercise. During your TIM meeting someone from the IVN team mentioned that you have an alert system that could be connected to EWS. That would be great for the project. We talked to Anax about it.

Q4: Do you need data from us for simulation?

A4: If you want to test for Covid we can support you. There is historical data for Ro (data you provide for DMHT; we can make predictions for this data; data must be for some weeks). FACS data are also useful for EWS. With the data for a few months we can do a simulation. We can make predictions and measures for CrisisHub.

Q5: Can CrisisHub do what EWS does?

A5: No. CrisisHub is the interface, and EWS is the intelligence (produces the prediction); together they work to organize the intervention.

Q6: How can we see the exits/outputs from the EWS?

A6: In CrisisHub. EWS is a collection of tools and models. Outputs are displayed in the project interface.

Action Points:

- IVN-Ro: send information to EWS tool owner as soon as possible; thinks about the possible date for the simulation; keep in touch with the EWS tool owner to solve the issues related to the use of this tool in trial; contact Squadev for information on SmarKo and WSMA integration status.
- EXUS: prepares the simulation of the EWS tool based on the data received from IVN.