



## INTELLIGENCE

### MASA Newsletter – Winter 2015



The prevalence of terrorism in many societies today necessitates global resilience against a potentially vast array of dangerous and highly volatile scenarios. Accordingly, the importance of efficient military and crisis management training has increased exponentially. Artificial intelligence systems such as MASA SWORD allow teams to train realistically in a risk-free environment. What is more, they further enable cost reduction in stringent macroeconomic conditions. Such artificial intelligence capabilities can help simulate almost any series of events, so that teams can authentically react to a situation, and analyze the consequences of their actions.

This capability is so valuable that the French Army, with whom we have had a long and successful working relationship over more than 10 years, has now invested in a global license for the deployment of SWORD across the Army. The French Armed Forces acquired the global license in summer 2015, and have already introduced the system at multiple levels in the Army. It has led to the future replacement of well-established simulation systems, such as JANUS, which is coming to the end of its lifecycle.

In parallel, the past six months have allowed MASA to continue the customization process of SWORD in Bangladesh, following a contract award last January to equip the Bangladeshi Computerized War-game Center, within the Army Training and Doctrine Command (ARTDOC). MASA has provided SWORD licenses, country specific features, and engineering support to customize SWORD. Furthermore, the Brazilian Army, which bought a major package of SWORD licenses as well as customization and deployment services for 2013-2014, recently led a series of successful large-scale training exercises in different cities throughout the country. They aimed at training state and federal government departments, as well as the civil defense municipalities to face natural and man-made disasters, such as a flood in Itajaí and a chemical accident in São Francisco do Sul.

Some interesting new deployments have also taken place in the emergency management area, which you can read more about in this issue. This includes a unique large-scale exercise with the French Committee for Civil Defense for the city of Paris, as well as a customer award in Le Havre, while MASA SYNERGY is adopted by the UN Office for Disaster Risk Reduction to improve preparedness within the global “resilient cities” initiative. Please turn to page 11 for more details.

Following these recent successes, MASA remains focused on growing its global footprint and expects to report on further new customers in the coming six months. We are delighted to be back at I/ITSEC in Orlando, Florida in December 2015, and look forward to hosting the first SWORD 'User Group' meeting to exchange ideas, best practices, and learning different ways in which SWORD can be used. The workgroup will also help MASA to better understand the needs, issues, and expectations of SWORD's current and future users around the world. Representative from the French, Brazilian, Singaporean, New Zealand, and Swiss armies, as well as many other military and civilian institutions including Emergency Management experts are all expected to attend.

This has been a very productive year for MASA and I look forward to discussing the company's various successes at I/ITSEC, our final exhibition for 2015, as well as looking ahead to next year's challenges.

*Juan Pablo Torres*

MASA Group President and CEO

## CUSTOMER SPOTLIGHT

### Interview with Commandant Thierry Cadot, French Army PM SOULT

*The French Army has earned a reputation of professionalism that has been built on a solid training regime and good equipment. Can you provide an overview of the size, ORBAT, role and capabilities of the modern French Army?*

In the last 20 years with the rise of technology, the French Army has developed thanks to its numerous commitments and rigorous training based on field implementation. Its use of simulation has also ensured the army has met its extensive requirement for command post training. With 128,000 personnel in 8 brigades and 77 regiments, the French Army is involved in a number of missions in France as well as abroad. For instance, as of today, more than 20,000 soldiers are engaged in France in its watch keeping mission or in missions abroad such as the Barkane mission. The French Army has modernised thanks to its recent equipment acquisitions (such as the Tiger helicopter) and is preparing for future missions with the Scorpion program.



*Can you say a few words about the French Army's approach to training philosophy, specifically with reference to the live, virtual and constructive training domains? Is training seen as an important aspect of readiness and does it receive the level of funding required to maintain that readiness?*

In the French Army, preparation for operational engagement using simulation covers: preparation for the future, operation support, and forces readiness (both group and individual training). This is a major topic for the French Army and today there are sufficient dedicated resources for it. The rationalization of tools has been identified as a key factor and has been taken into account since designing the operational simulation system for the French Army.

As for live, virtual and constructive (LVC), from an operational viewpoint it would not make sense for the Army to separate and discriminate between its simulation training tools to prepare for action, if not on a technical basis then at least on a pedagogical level.

For this there are three types of tools:

1. Tools to achieve and strengthen technical skills – most of the time these tools are virtual
2. Tools to achieve and strengthen tactical skills. Until recently these tools were mostly constructive but the level of autonomy given to lower ranks (corporal, sergeant etc.) forces us to train them using virtual tools, such as those derived from First-Person Shooter games.
3. Tools that control the acquisition of technical and tactical know-how in hard psychological conditions. These are live tools.

The French army is considering connecting constructive and virtual tools in order to simulate technico-tactical exercises. From a strictly operational viewpoint, the French Army is not trying to develop LVC distributed simulation. On the other hand, for strictly technical reasons, LVC will be implemented in the 2<sup>nd</sup> stage of the Scorpion programme with dynamic embedded simulation around 2025-2030. (Scorpion is a programme aimed at developing and modernising the IATF [Inter-Agency Task Force] for the French Army).

***The French Army was the first customer for SWORD taking delivery back in 2002. Can you explain how this early system was used by the French Army?***

In 2002, the French Army bought a training platform based on constructive simulation that took into account the latest technological evolutions, such as the use of Artificial Intelligence. The initial system, SCIPIO, has been used for training and command posts' control over brigades and battalions. Set in Mailly inside the *Centre d'Entraînement des Postes de Commandement* (CEPC), SCIPIO has been replacing BBS. Since 2013, the French Army has been looking for a replacement to SCIPIO that could also replace Janus and the self-training of garrison battalions.

***What major benefits does the new SWORD Global Licence provide and how do these differ from your previous application of SWORD?***

The use of SWORD in SCIPIO was for just one centre. Now, with SWORD's global license into SOULT, the Army is going to multiply its use thanks to the implementation of SOULT in the 5 training schools and 77 army regiments. The global license is the answer to the Army's request for rationalization. On top of that, thanks to MASA's roadmap, SWORD is evolving and adapts itself perfectly to each and every trainee's needs. Thanks to the global license, the training of the two divisions that will be created in 2016 will go smoothly.

***Can you provide a description of the SOULT project; specifically how and when it emerged, why it is important and how it is being implemented?***

Three years ago, the French armed forces began a rationalization process. Simulation used a lot of different software. It was important to choose the most efficient and the most flexible one and then extend its use. On the constructive simulation side, SWORD from MASA stood out and will thus replace SCIPIO, Janus and Romulus. Moreover SOULT is used while connected to information systems. This entirely digitalized training brings real value to command post training.

***What are the roles of CEISIM and SDOR EMAT and their relationship with SOULT?***

SDOR EMAT (Section de Développement des Opérations en Réseau de Etat-Major de l'Armée de Terre) has been at the core of the simulation rationalization process. Advised by the CEISIM (Centre d'Expertise de L'Infovalorisation et de la SIMulation), it has been a driving force into the acquisition of SWORD's global license. CEISIM, thanks to its developers, adapts SWORD to the operational needs and creates a link between SWORD and the information systems.

*What benefits does SWORD provide compared to JANUS? (Better user interface, reduced training time for exercise facilitators, maintainability, flexibility, larger number of entities, improved fidelity?)*

Janus is a very efficient system that allowed us to train command posts for many years. Thanks to its own developers, the French Army maintained the software to an excellent level. But faced with the downsizing of the personnel in the army, it has been decided to stop upgrading the system and thus to abandon Janus. SWORD will allow the introduction of Artificial Intelligence into those trainings, which used to depend entirely on the number and quality of the operators. From now on, using SWORD, the training centers will be able to reduce their number of operators and improve the realism of training. Moreover, thanks to its cloud deployment and intuitive interface, SWORD is easy-to-use.

*DGA were a key partner in the decision to select a SWORD Global Licence. How did the relationship between the Direction Générale de L'Armement (DGA – the French procurement agency) and the French Army work and what skills did both parties provide?*

When it comes to the acquisition of new capabilities, the partnership between the forces and the DGA is essential and very rewarding. Acquisitions are made by the DGA, which brings in its technical expertise and knowledge of industrial companies, while the CEISIM expresses the needs from those on operation. Everyone works to guarantee maximum satisfaction for the forces.

*What is the future for SOULT? Where will it be in five years' time?*

We'll benefit from the evolutions of SWORD thanks to the acquisition of a three year support program and road map from MASA. After that, we will review our experience but SOULT should continue in order to maintain the highest level of French Army training capabilities. A foreseeable extension for SWORD lies with the joint forces CBRN (chemical, biological, radiological & nuclear) center or the logistics training center. SWORD's flexibility also increases the possibilities for training other specialty areas.

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## MASA wins a global license with the French Army

Following 12 years of successful collaboration, the French Armed Forces have expanded their use of MASA's flagship constructive simulation software, SWORD, through the acquisition of a global license.

MASA Group's long-term military customer, the French Army, is leading the way in the preparation for operational engagement through simulation with the acquisition of a global license for MASA's internationally renowned SWORD automated war-game. Having originally identified SWORD's underlying technology as a pioneering tool for cost-effective, time-efficient training in 2002, this recent, significant agreement follows many years of solid collaboration between MASA, the French procurement agency (DGA) and the French Land Forces. SWORD provides an immediate solution to SOULT (the simulation program for Combined Forces and Ground Logistics Units' Operations), for the operational preparation of Combined Forces at division, brigade, and battle group command posts.

**Colonel Philippe Dutroncy, SDOR EMAT (Network Operations Development Service, Land Forces Command)**, said *"the flexibility of employment and evolution of SWORD effectively allows us to foresee its use in all types of operational preparation for command posts, but also in training specialist areas (Engineering, Intelligence, Logistics, or CBRN - Chemical, Biological, Radiological, Nuclear), the testing of future military doctrines, the preparation of operations, and for post-operation analysis and conclusions"*.

The SOULT program will be rolled out gradually, beginning with the Training Centre for Command Posts (CEPC), to ensure the continued service of the current SCIPPIO system, which already operates with previous versions of SWORD and has been deployed and used operationally by the CEPC since 2006. Training centers, brigades and regiments will steadily be equipped from 2016, giving them their first decentralized capability for self-training and allowing them to make the best use of their training sessions in force readiness centers.

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## MASA SWORD gets a dynamic upgrade

SWORD is a wargame with automated forces that is powered by innovative artificial intelligence (AI) technology. This enables simulated units to act according to national doctrine that has been validated by subject matter experts. This unique capability means large-scale exercises are conducted in the most realistic way possible, while minimizing the combined operating costs associated with large deployments of military units to train command staff.

The latest version of SWORD, v.6.3, adds a number of forward-looking features. The first of these is a multiple server capability that enables servers and clients to be administered directly using a single web interface. The key benefit of this feature is that it allows training center administrators and trainers to configure exercises remotely and initiate multiple training sessions in parallel. The arrival of SWORD v.6.3 also now allows the dynamic – or on-the-fly - modification of scores and indicators during the actual exercise to reflect changing situations or parameters. This ability to modify and define such factors as key performance indicators is enhanced with a powerful editor that allows trainers to create complex customized formulae that can enhance and enrich the after action review (AAR) process. This allows trainees to gain much more from the simulation-based training process.

As part of the upgrade, SWORD v.6.3 also includes a new Preparation Guide within the Product Documentation Set, which provides a comprehensive detailed description to allow system administrators and trainers to maximize the benefits of SWORD's new capabilities.

*“We are very proud to release this latest version of SWORD as it brings our customers many additional and advanced benefits that greatly improve the training and analysis capabilities they can offer”,* said MASA Group President and CEO, Juan-Pablo Torres. *“Our team of world-class software engineers continues to work closely with our growing user community to keep SWORD as the world's leading AI-based wargame system for training and analysis.”*

SWORD is now in service with 16 armies throughout the world in addition to a large number of defense industry partners and government emergency response bodies.

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## MASA profile: Mathieu Igarza

### *Can you describe your roles and responsibilities within the company?*

I have two main roles concerning the SWORD product. Formally, my role is to ensure that SWORD is released with a set of generic data so that customers can easily customize the product. Customization is a strong key feature of SWORD which allows clients to make SWORD fit quickly with their need (specifically concerning military doctrine). My knowledge of the product also leads me to a pre-sales and training role, mostly when SWORD is used to perform "operational and doctrine analysis".



### *With modern technology moving at such a pace, how do you manage to stay abreast with the latest developments?*

Being present at the main simulation conferences such as I/ITSEC and ITEC is the best way to stay alert about competitors and new technologies.

### *Many people outside France would envy you living and working in Paris. What are the best parts about being based in such a beautiful city?*

Food of course! It is true that Paris is a beautiful city, especially by the Opera Garnier, where MASA's office is located. It makes coming to work every day such a pleasure.

### *Your job involves travel for the company, so what has been your most exciting destination and why?*

I have to travel to many countries to undertake a variety of tasks, which provide me with a range of positive experiences. Maybe one of the most exciting was Australia for both professional and personal experiences. My assignment there was to train the Defense Science and Technology Group (DSTG) how to use SWORD for 'course of action analysis', and also to help them understand how to use SWORD as a part of the wider simulation offering. Aside from the professional experience, it was my first time in Australia. The training took place in Adelaide, the largest wine growing region in Australia. A few miles from Adelaide is Barossa Valley, famous for its Shiraz vineyards. The local team were kind enough to take me there. I had the opportunity to taste good wine and admire the unusual and beautiful landscape.

### *In your opinion what are the most important developments in simulation and training?*

Simulations are no longer developed as a whole system, made to respond to a unique need, nor to fit with a specific customer's need. Training with simulations involves a huge number of use cases. As a result, interoperability between simulation tools is increasingly unavoidable, as is the need to build adaptable simulation systems. Customer needs change every day and simulation products must be made to fit quickly with those needs. Future simulation products must be "ready to use", easy to deploy, interoperable and fast to operate.



### *What makes MASA unique?*

We are a small company, which means that we need to adapt quickly. I think we are very good at this. We also have more than ten years of simulation training experience, which leads the development of our SWORD product toward strong features.

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### MASA around the world



## Major incident training exercise held in Paris using SWORD

The principal French authority responsible for civil defense has used MASA's market-leading crisis management simulation software to conduct a critical training exercise in order to enhance the capital city's potential response to persistent and violent flooding.

An estimated 500 representatives from 15 French companies took part in a two-day training exercise based on the occurrence of two weeks' of major flooding in the streets of Paris. Organized by the French High Committee for Civil Defense (HCFDC), the hypothetical event was recreated using SWORD, MASA's automated simulation solution for emergency preparedness and planning.

Staged on 29-30 September 2015, the exercise was based on the catastrophic 1910 Great Flood of Paris, during which the Seine rose eight meters above its usual seasonal level. It precisely simulated the flow of water and the impact of rising flood levels on the city's infrastructure, while testing the participants' reactions and response. The group included representatives from leading energy and water providers, television networks, telecommunication companies and public transport operatives. They were joined by envoys of Paris City Hall and the "*Secrétariat Général de la Zone de Défense et de Sécurité de Paris*" (General Secretariat for the Defense and Security of Paris), which is responsible for the city's crisis management.

Simultaneously connected to SWORD from separate crisis response units, each organization was able to see the immediate results of their actions, as well as those of the others. They were also provided with a three-dimensional crisis overview of Paris on Google Earth, powered by SWORD.



The significance of the exercise was emphasized by the widespread flash flooding which devastated the French Riviera a few days later. Indeed, the unprecedented rainfall and violent storms which led to much tragedy in the region will no doubt lead the country's authorities to examine how best to maintain coordinated emergency preparedness and robust civil defenses, even in milder climates.

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## MASA joins new UN directive to focus on improving emergency and crisis planning

MASA Group has participated in the first Annual General Meeting of the United Nations Alliance for Risk Sensitive investment (ARISE). ARISE is a private sector alliance for Disaster Resilient Societies and was launched on November 6th, 2015 by the UN Office for Disaster Risk Reduction (UNISDR) with the aim of raising resilience in the face of both natural and man-made hazards. So far 100 companies across Europe, Africa, the Americas and Australasia have signed up to help reduce the business world's impact on the earth.

A founding member of ARISE, MASA's involvement with the new alliance is centered on the use of its artificial-intelligence capabilities to simulate risks and emergency plans. SYNERGY is an artificial intelligence (AI)-based software that creates highly realistic simulations for large crisis scenarios. It can reduce the impact of disasters by both validating disaster plans and training staff to improve their level of preparedness in the face of an emergency. SYNERGY can also test out multiple response strategies during an actual disaster and calculate the outcome of these response strategies in real time. The appointed crisis team can then select the most effective solution.

ARISE anticipates that MASA will be able to contribute to building a safer world through involvement in the "Making Cities Resilient" campaign. The aim is to set up pilot schemes in five to eight resilient cities and to use MASA's SYNERGY tool to test the existing emergency and disaster plans in the cities, as well as to train senior crisis staff to improve their level of preparedness in the case of a disaster.

MASA hopes that, with SYNERGY and the ARISE alliance, it can help cities and organizations be better prepared, react quicker and make more accurate decisions in the case of emergencies or disasters.

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## MASA witnesses steady growth in Asia-Pacific region

MASA has seen steady growth in the Asia-Pacific region, where demand is rising for highly efficient virtual, live and constructive simulation systems. MASA and its local reseller have recently been awarded a public tender by Singapore's procurement agency, the Defence Science and Technology Agency (DSTA), to deliver a user license for a land combat simulation software requirement. As part of the package being delivered for the DSTA, the winning bid will include the capabilities offered by SWORD. *"Asia Technical Services Pte Ltd is delighted to have worked with MASA for the past 10 years", explains Patrick J. Garez, Managing Director, and we have already received an extremely positive reaction from key players in the regional market, who state that SWORD is a particularly attractive addition to our offering*".

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## MASA congratulates CODAH for its national award "Résilience Sociétale" on crisis management planning

The local government body responsible for the French port city of Le Havre – the *Communauté De l'Agglomération Havraise* (CODAH) – has been awarded the "Trophée de la Collectivité Locale" of "Social Resilience" by the French Committee for Civil Defense (HCFDC). The prize recognizes exceptional crisis management planning and preparation work at local government level and is presented by French officials from across the public and private sectors. This nationwide competition is held every two years to reward societal resilience initiatives in the fields of security, crisis management, public safety and continuity of service within the context of major risks and threats.

As part of an ongoing training process, the local government authorities in Le Havre use MASA Group's Artificial Intelligence (AI)-based simulation system, SWORD, within its civil security/crisis preparedness platform. SWORD has been in service in Le Havre since 2009 and is deployed during three two-day exercises which are held each year. Each course is typically attended by up to 15 representatives responsible for crisis management from industry, government, the emergency services and the harbor authority.

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On the 15<sup>th</sup> November, the Army Training and Doctrine Command (ARTDOC) Computerized War Game Centre was officially opened in Dhaka by President Abdul Hamid, which Najoua Rostand, New Markets Development & Sales Manager at MASA, attended on behalf of the company.