

## KEYNOTE ADDRESS: TOMORROW'S UNSURE WORLD

Distinguished guests, ladies and gentlemen. As the Department of Defence's Government Information Technology Officer, it is an honour and a privilege to present the key note address here today.

Our world of Electronic Warfare dates back to the Russian – Japanese war of 1904/05 during which radio communications was used for the first time. It was but a humble beginning when a Russian radio operator intercepted radio signals from the Japanese and then attempted to jam the Japanese communications.

A 105 years later we experience a cataclysmic escalation of the use of Electronic Warfare today be it offensive or defensive. So what has changed?

The digital battle field is going to be a hive of electromagnetic transmission activity, part of it being disinformation and/or jamming. So it is of vital importance that we today develop and design EW equipment and harden our systems to give us the upper-hand in future wars.

Now the only certain thing about the future is that it will be different to what we think it will be. Technology is improving exponentially – so what do we prepare for. It is said that military forces prepare for the previous wars. Going into WWII with WWI equipment and doctrine until they realised that times and technology had changed. If that is the case then we have lost prior to the commencement of the new era war

So the world has become much more unpredictable and dangerous.

The “asymmetric” tactics adversaries revert to when confronted with technologies they cannot match, have shifted the boundaries of how war is being fought. Our continent, Africa, is a typical example of this phenomena. But the African Battlespace, with respect to EW, easily becomes the Global Digital Battlespace

But in contrast there is the linking of UAV’s, UUV’s and ULV’s into the digital battlespace. This is a quantum leap wrt sensors and thus data flow on the digital battlefield. The soldier and his PDA or just the Robot Soldier with everything build in.

The post Cold War era we live in, is an unpredictable and unsure place. The media regularly brings us the terrible news of increasing regional conflicts, escalating instability as well as the tragic and horrific human suffering that goes with it.

There are many factors contributing to this situation i.e. over population, large scale demographic movement of people, increased competition for diminishing resources, global heating with catastrophic climate change consequences, “unsolved” regional disputes, unsustainable ways of living, greed – to name just a few.

The era of the “suicide bomber” and “improvised explosive devices” (IEDs), with the means to kill, many in random fashion, with all its terrifying consequences, has probably come to stay. Take note that there are 60% more people on this planet that when I was born in 1950.

This overpopulation is predominantly due to demographic movement of people in the planets history.

We have seen how intolerant even “civilized” people have become when stressful circumstances occur ie. Economic meltdown, Climatic change and in South Africa in particular, service delivery. Strikes are but one of the ways people express there disgruntlement.

History has also shown that the greed for resources is probably the number one reason why people make war. Oil, Minerals, Arable Land and Water.

I am of the opinion that that there will be more wars in the future. They might not be as global as the two World Wars but will be regional and will occur frequently driven by failed states, lack of resources being wealth, land and water etc. Africa is at present experiencing many of these wars – Dafur, DRC, Somalia, etc.

So it will therefore do us well if we can anticipate what we have to prepare ourselves for to face the uncertain future.

As far as the African continent is concerned, one can already observe Private Military/Security Companies, also referred to as the “Corpratisation of War”, as being active in our continent. This could have an effect on the telecommunications systems being used for Command and Control.

The challenges that new technology and new threats pose to EW has been a major issue ever since the electro magnetic spectrum was first used in warfare

The problem of our time is that new technology is evolving and finding its way into old and new types of threats at an ever increasing pace.

Billions of Rands are spent every year to develop telecommunications and electronic devices for the commercial marketplace. Asymmetric threats are especially difficult to counter because they exploit the ever increasing momentum of the astonishing developments of these electronic devices which as said is freely available.

EW budgets do not stand a chance against the mega billions spent on the commercial telecommunication and electronic gadget market and the infrastructure to sustain it.

The more conventional EW threats i.e. air defence systems, anti ship missiles, torpedoes, anti armour guided weapons etc are on the other hand still out there. They of course also employ more and more sophisticated technology each time new generation versions appear.

It would be very foolish not to maintain EW capabilities required to counter and defeat them which in turn puts even more pressure on EW budgets.

We have now come to the conclusion that the world is a place of unsurely as far as predicting the modus operandi of the electromagnetic condition of the digital battlefield. So what are we going to be up against in the future digital battlespace.

Tomorrows Unsure World with respect to Electronic Warfare for the Digitised Battlefield will include:

- a. High Powered Microwave (HPM).
- b. Lasers Destruction Weapons.
- c. Radio Frequency Directed Energy Weapons (RF DEW) to disrupt/degrade and destroy electronics. Personnel heating of body tissue – CW RF DEW.
- d. Electro-Magnetic Pulse (EMP) weapons.
- e. Tactical Nuclear Battlefield Weapons.
- f. Gama-ray Radiation Weapons.

Do we now revert to the David and Goliath syndrome in that we run or we fight? The more sophisticated the digital battlefield becomes, the greater and more susceptible it becomes to being disrupted by EW.

Future requirements must include Jointness (establishing a Truly Joint EW Capability as part of the bigger capability of IW) as reflected in the SANDF's DIW. The USA has launched an EW modernistic programme and looking at an EW Critical Technology List. Future troops will need extensive "Knowledge and Training"

At planning and Command and Control levels, a JIW Cell at Strategic Level with Joint EW at Sub-Strategic Level must be established. A Joint EW training programme (EW exercises with conventional forces) must be conducted to ensure that troops and commanders are exposed to the effects and management of EW.

I am looking forward to listening to all of you who are going to present solutions on how the role of EW will change the face of the battlefield.

EW Saves Lives – Lets make the best of it.

I thank you.