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LEONARDO DRS

Since 1969

# Deployable EW Threat Range Systems *The Why and the How*

AOC EW Europe  
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 **LEONARDO DRS**

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## The obvious question:

Heywood .... What's with the battleship?

I thought you were talking about EW ranges!

# SO..... A little Heywood history to set the stage ....



**I started flying a LONG time ago.....**



# Training systems when I started flying reconnaissance in late 1983 were NOT exactly robust



- One approved route to/on range due to airspace restrictions (EM, physical, etc)
- Two threats
  - SA-2 (both freqs)
  - SA-3





**Training systems when I started flying reconnaissance  
in late 1983 were NOT exactly robust**

**Good training?**

**OK training?**

**Negative training?**

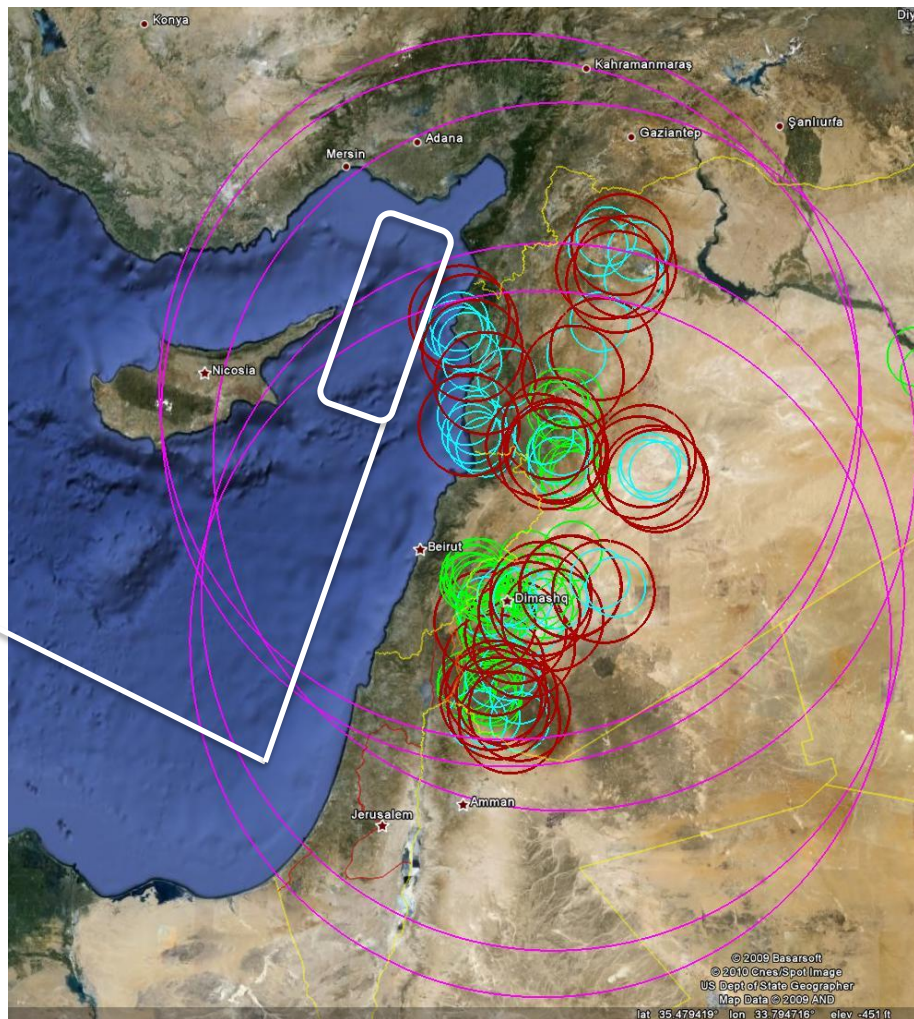


# My first DEPLOYMENT was in early 1984 – providing targeting for Battleship fire in support of US Marines in Beirut



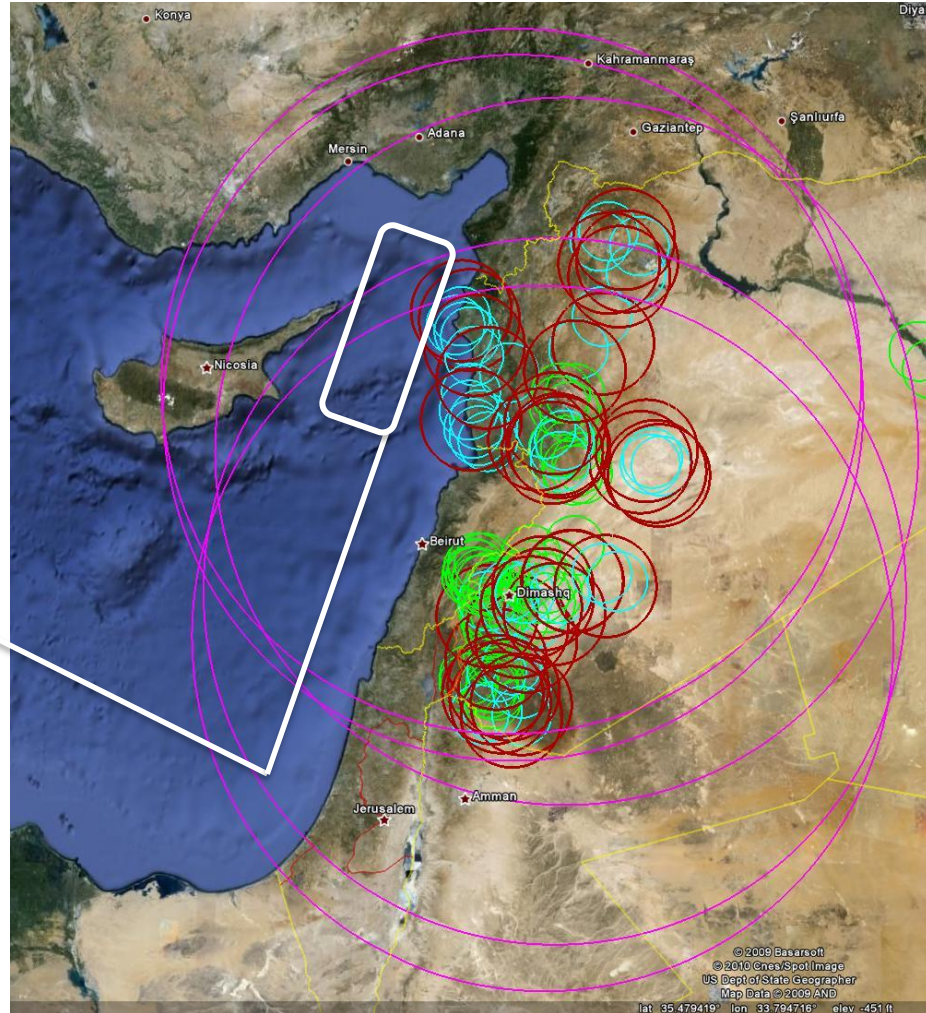
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- Threat laydown shown is SAM only – fighters provided additional threats!
- Threats at the time that could (potentially) reach me included
  - SA-2
  - SA-3
  - And the “deathstar of the day” the SA-5



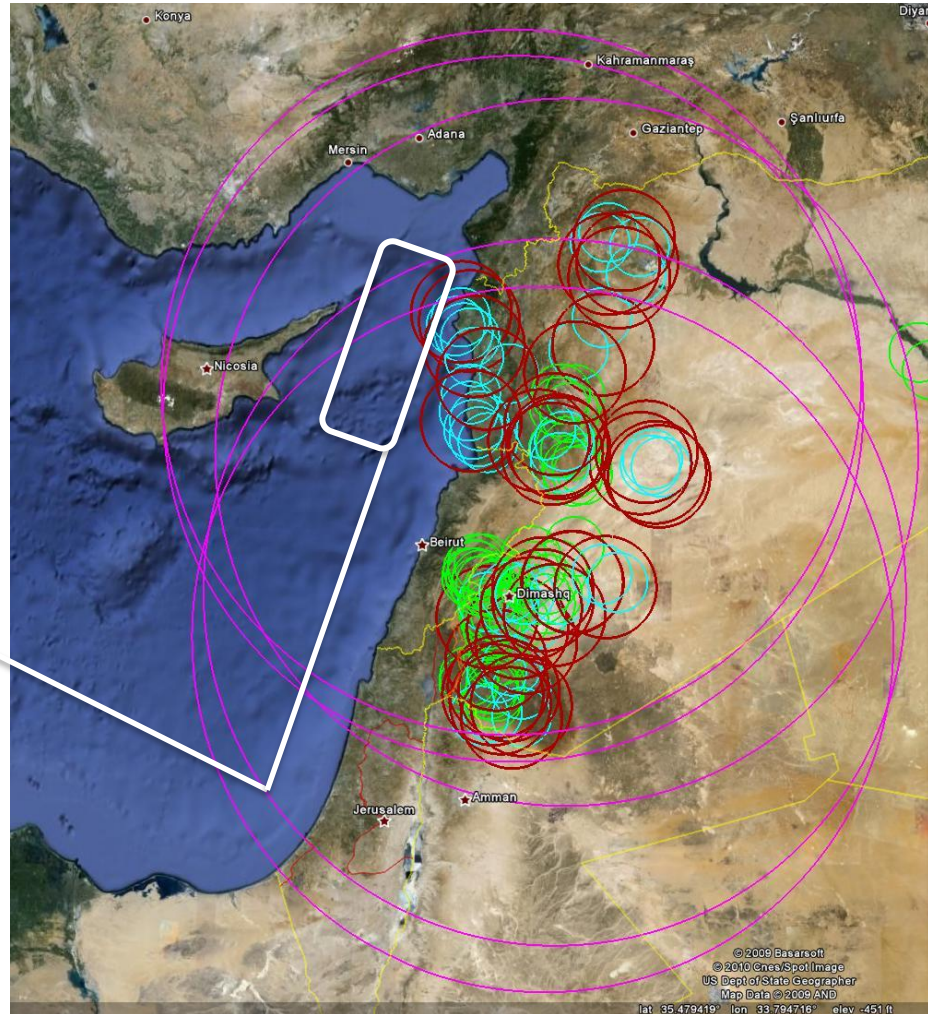
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## Was I adequately prepared?



# My FIRST deployment was in early 1984 – providing targeting for a battleship off the coast of Lebanon!

Was there a way to truly prepare?



**Our goal should be to find the most effective training method possible while considering the restraints we live with ....**

Range Space

Budget

Other restrictions

## What does the perfect range look like?

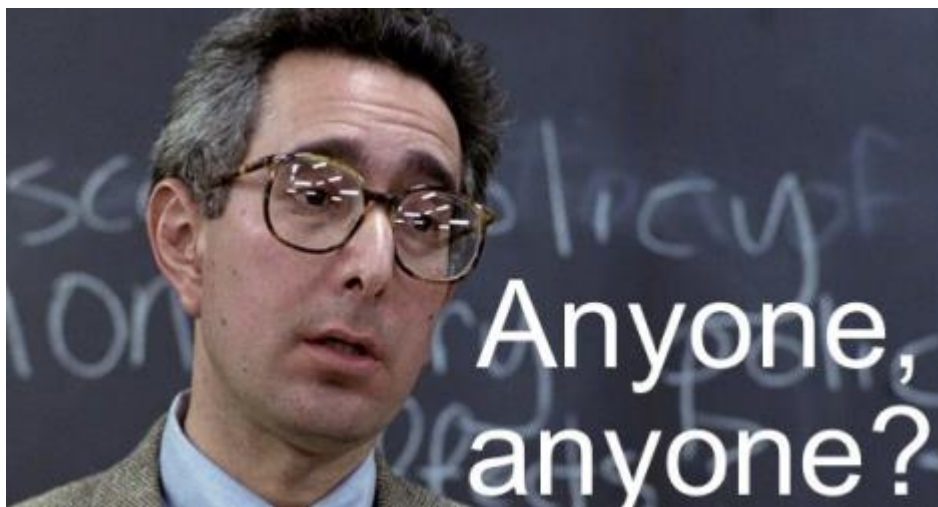
- LARGE training area
- No restrictions on avenues of attack, RF emissions (threat or jamming), chaff, flares, manuevers .....
- Integrated IADs
- Robust threat laydown
- Fully representative threats
  - Full ERP
  - Correct EW signature

# And where do we find this perfect range?

Anyone?



# No ...really ... Anyone?



**Now that we've answered THAT question let's look at the best we've got .....**

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	Large Training Area	Limited/No restrictions	IADS	Robust Threat Laydown	Fully Representative Threats
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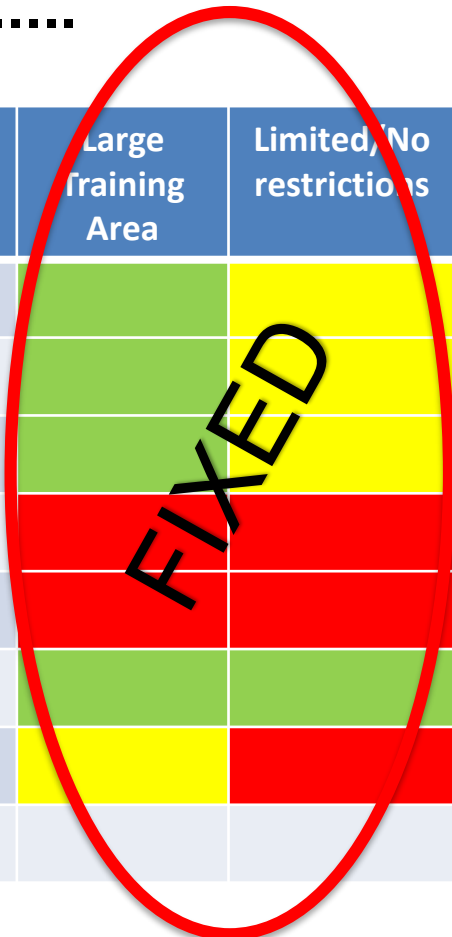
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JPARC Alaska, US					
Cold Lake, Canada					<b>aging</b>
Polygone, Germany					
RAF Spadeadam, UK					<b>aging</b>
Vidsel, Sweden			<b>none</b>	<b>none</b>	<b>none</b>
PISQ, Italy			<b>Limited</b>	<b>Limited</b>	<b>aging</b>

# Now that we've answered THAT question let's look at the best we've got .....

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Cold Lake, Canada	Green	Yellow	Green	Yellow	aging
Polygone, Germany	Red	Red	Green	Yellow	aging
RAF Spadeadam, UK	Red	Red	Yellow	Red	aging
Vidsel, Sweden	Green	Green	none	none	none
PISQ, Italy	Yellow	Red	Limited	Limited	aging

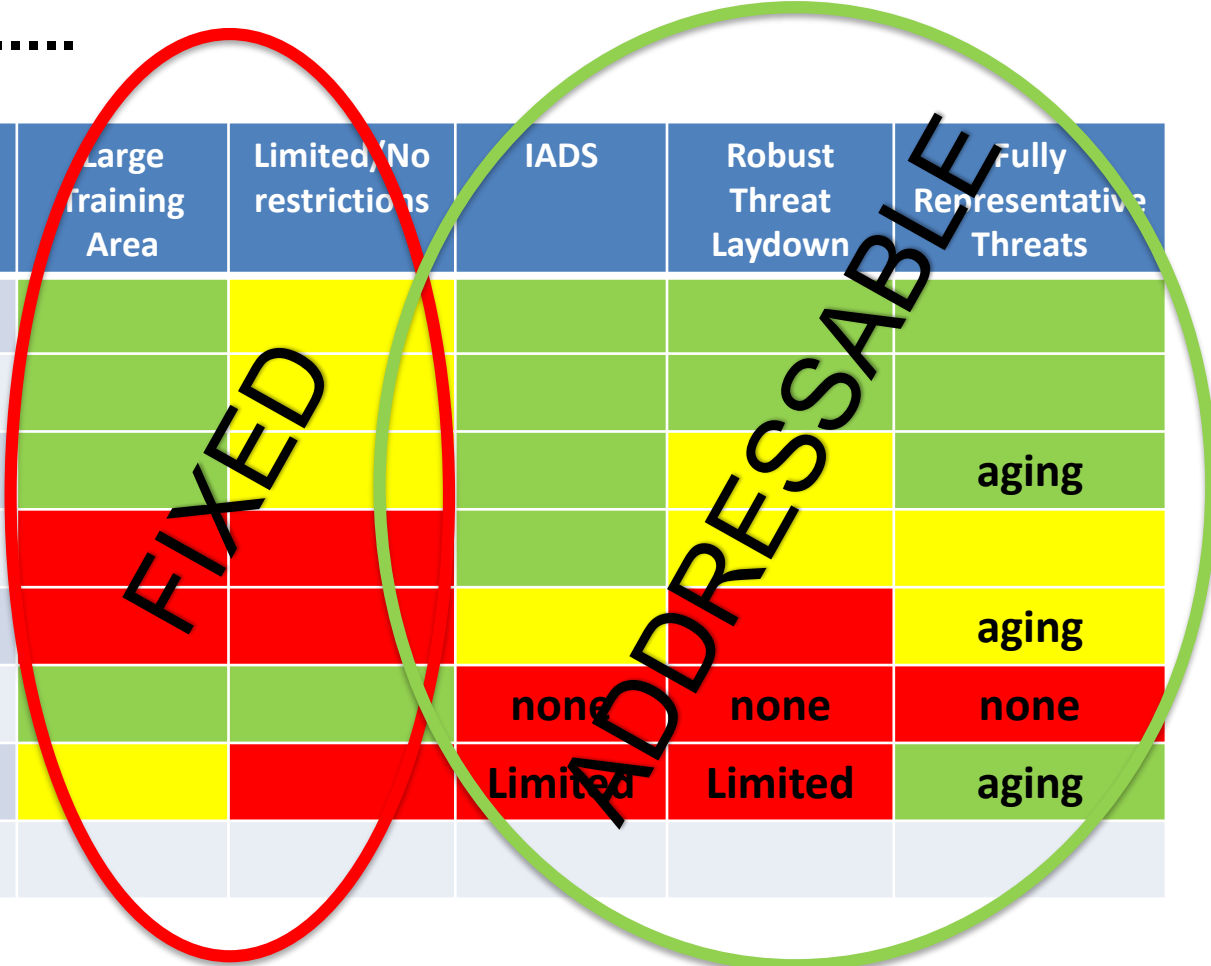
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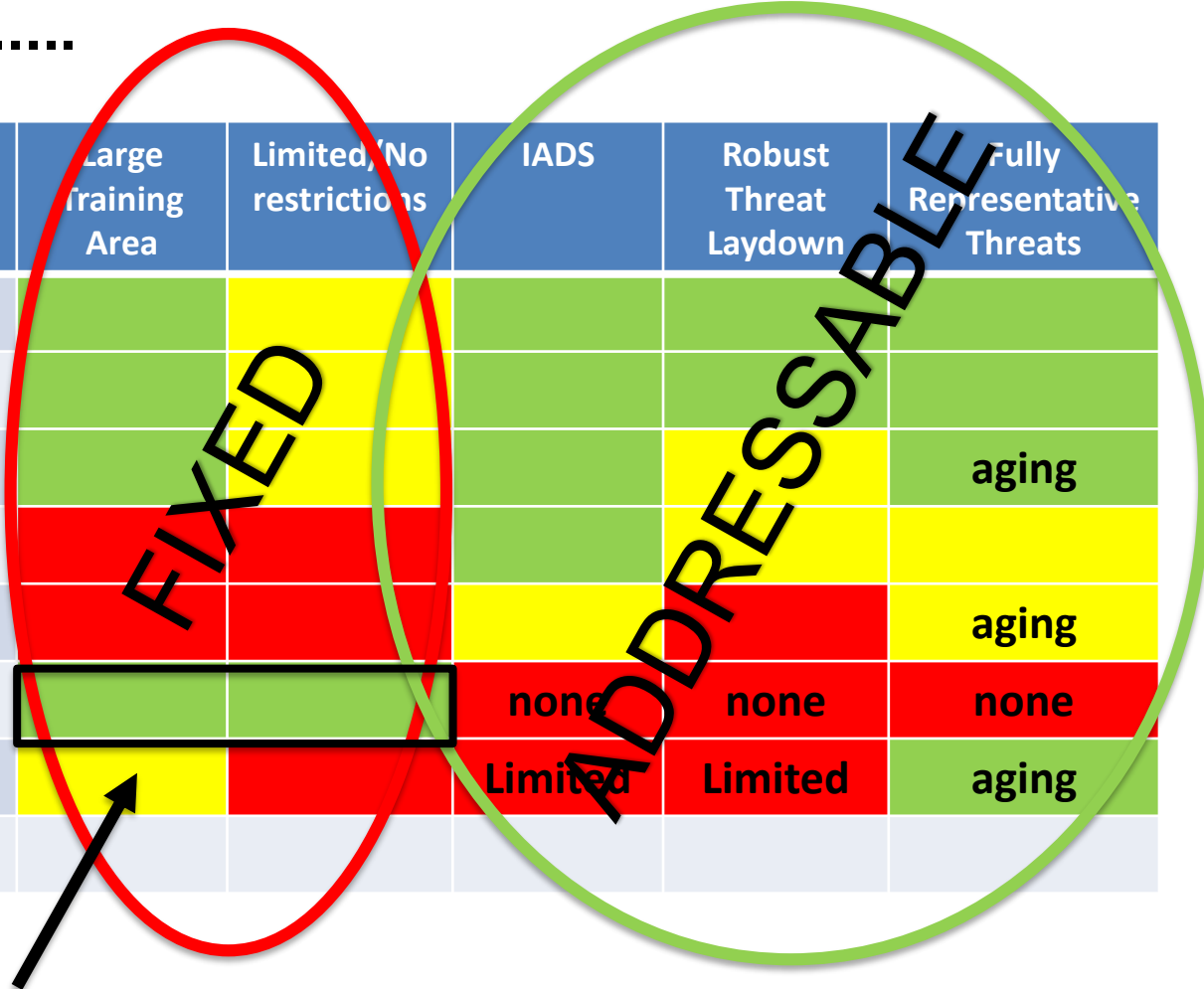
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These are INCREDIBLE assets!



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- Multiple tools exist, both live and virtual, that can help mimic a robust Integrated Air Defense System
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  - Maybe not, depending on goal of your training range....

If your goal is core aircrew training then this may not be necessary!

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Robust threat laydown too expensive?  
**MOBILITY IS KEY!**

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## Robust Threat Laydown

- How many threats can you afford?
- How can you maximize effectiveness of fewer than optimal threats?

**MOBILITY IS KEY!**

- Target should be 30 minute breakdown and 30 minute setup
  - Allows rapid range reconfiguration and a different training task on every go!
- This is effective both on small/space limited ranges as well as large and diverse ranges!

# Addressable areas

## Fully Representative Threats:

- Threats simulators and emulators that ACCURATELY represent the actual threat are CRITICAL to effective training
  - MUST be full ERP
  - MUST be spot on signal representations
  - MUST allow for responsiveness to jamming, etc
  - MUST be able to emulate multiple modes
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Wide Band Mid-Fidelity Threats Should be Avoided to the Max Extent Possible When Narrow Band Full ERP Systems are Available!



# Flexibility Allows the Most Bang for the Buck

- The ability to rapidly reconfigure your range is great!
- The ability to relocate your range to new locations as either a stand alone system or as part of a larger range architecture adds an entirely new dimension to the training equation!

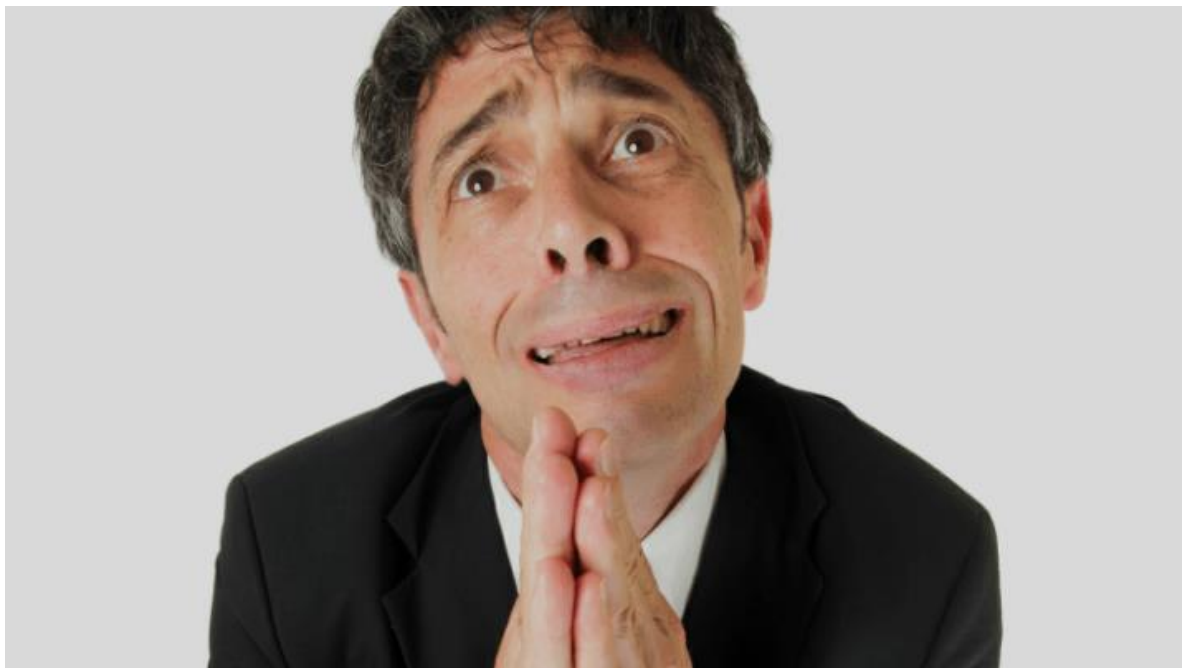
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These Solutions Exists!

# SPEAKER'S NOTE:

(lest I draw the wrath of the good Air Marshall)



The next few slides ARE NOT intended as a “commercial” for a Leonardo DRS product ....

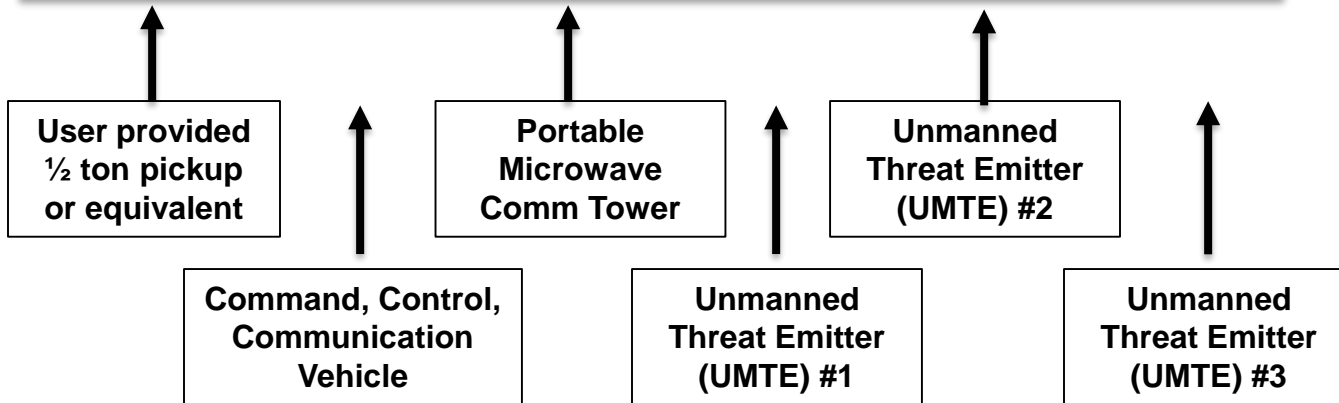
The INTENT is to show ONE existing capability that could help meet mobile range needs

# Joint Deployable Electronic Warfare Range (JDEWR)



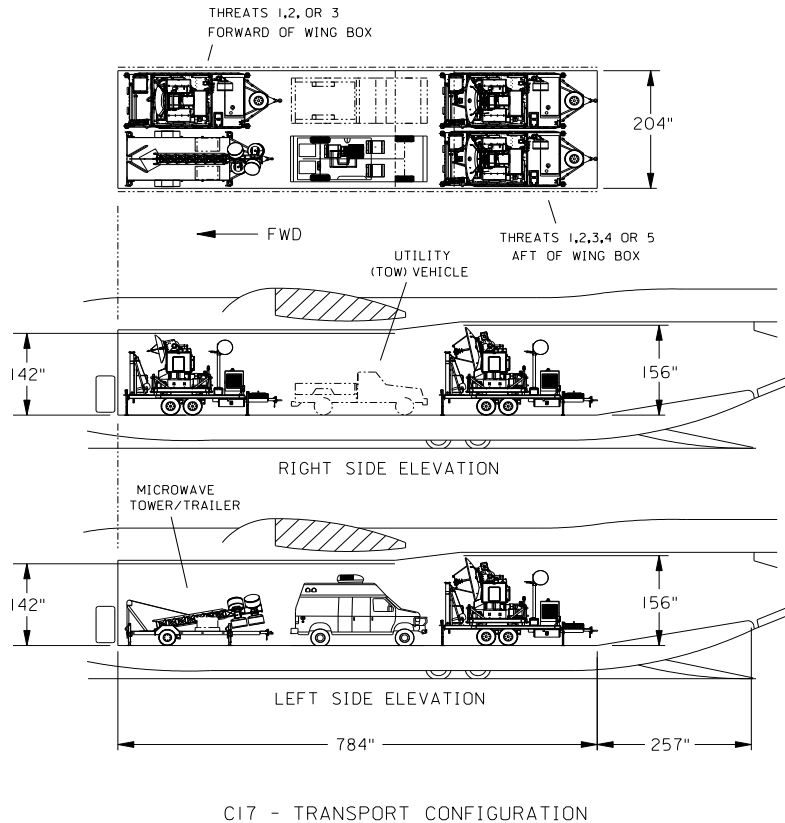
- Joint Deployable Electronic Warfare Range (JDEWR) is a self contained, high-mobility full-Effective Radiated Power (ERP) RF threat range solution
- JDEWR was designed as a ‘rangeless’ threat simulator – it can be transported anywhere in the world where the Warfighter needs EW training
- Currently fielded by USAF and in use throughout the Pacific theater, JDEWR is **TOTALLY INTEROPERABLE WITH USAF JDEWR and UMTE SYSTEMS WORLDWIDE!**

# Joint Deployable Electronic Warfare Range (JDEWR)



- Modules consists of a single Command, Control & Communication vehicle, a portable comm network, and various trailer-mounted Unmanned Threat Emulators (UMTE's)

# Joint Deployable Electronic Warfare Range (JDEWR)



**A 3 threat range can be transported anywhere via a single C17 or multiple C-130s**



# Joint Deployable Electronic Warfare Range (JDEWR)



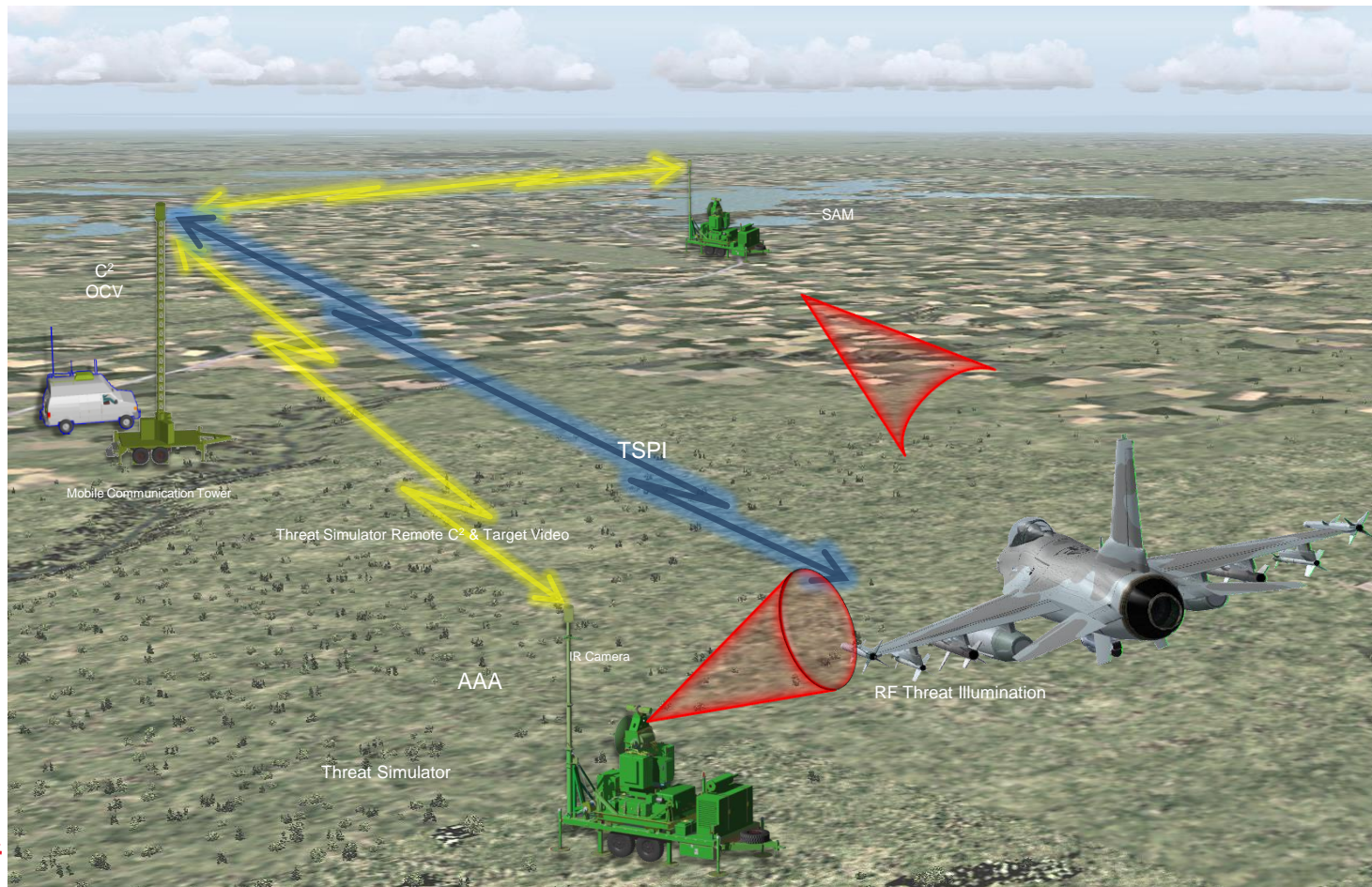
# Expandability

- Mobility and Relocatability is GREAT, but....

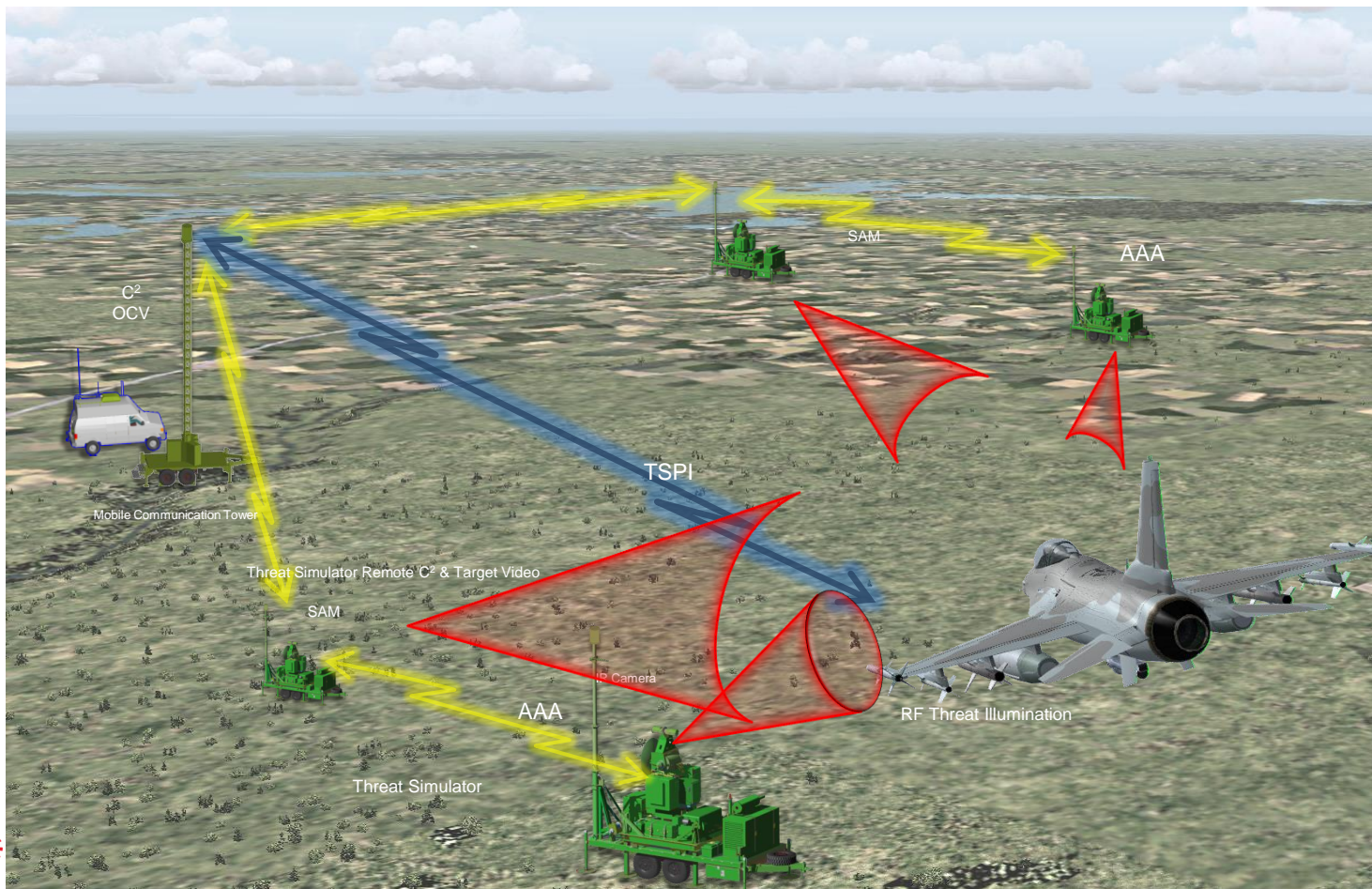
# Expandability

- Mobility and Relocatability is GREAT, but....
- A system that is fully interoperable with other range systems and/or threats is even better!
- Pending security permissions, multiple countries who utilize the same range system can join their systems into a much larger air defense infrastructure for a large scale combined exercise
  - This allows a true «crawl, walk, run» training capability to enhance warfighter effectiveness

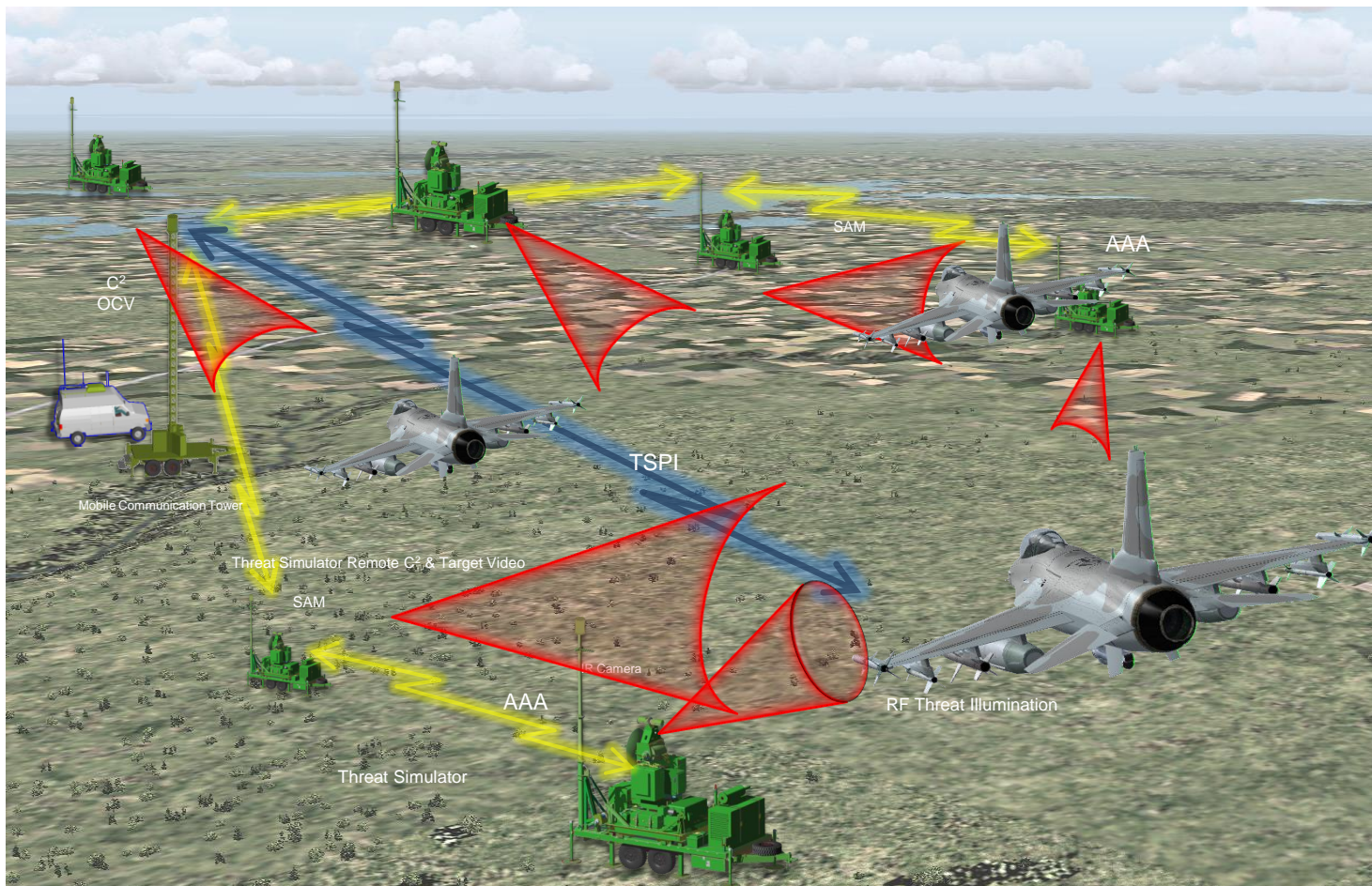
# Single Country Training Event



# Adjacent Country Training Event



# Multiple Country Training Event



# The Importance of Mobility

Mobile range solutions will provide value to any size range:

- The ability to reconfigure the threat laydown to allow different training scenarios within a limited training space
- The ability to redeploy a single set of training equipment to other in-country training areas
- The ability to deploy the range solutions with OTHER countries allowing a much more robust regional training scenario
- The ability to integrate with fixed strategic threats to enhance training scenarios

# BOTTOM LINE

- Future training, both live and virtual, requires modern and integrated ACMI and EW training technologies in order to provide the best trained and equipped aircrews.....



**....and regardless of your budget or range space there IS a training solution that fits your budget and requirements!**



## Summary

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As countries and Air Forces look to the future of Air Combat Training it is critical to remember that the Live component of LVC will always be needed

Smart procurements of *mobile*, *full ERP*, *reconfigurable* range systems will be critical to providing cost effective solutions

A combination of fixed and mobile threats could provide the best possible solution for ANY specific need

# We can't afford to let our warfighter's first taste of combat look like this ....





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