



# *Military Intelligence Part 1*

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# *Outline*

- Definitions Revisited
- Modern Warfare
- Coordination by Standardization
- Coordination by Ontologies as Standardization

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# *Definitions 101*

- For any definition there is a term defined –  $T$  – and the expression or expressions –  $E$  – defining that term
- A definition is a pair  $\langle T, E \rangle$
- For any definition and any domain,  $T$  is true of that domain just in case  $E$  is true of that domain

**Triangle =<sub>def</sub> A polygon with three edges and three vertices**

# *Evaluating Definitions*

- Evaluating a definition then involves at least two steps:
  - Assume T is true of a domain, attempt to find a scenario in which E is not
  - Assume E is true of a domain, attempt to find a scenario in which T is not

**Triangle =<sub>def</sub> A polygon with three edges and three vertices**

- The preceding is a good definition; any triangle is a polygon with three edges and vertices; any polygon with three edges and vertices is a triangle

# *Evaluating Definitions*

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**Human Being =<sub>def</sub> A featherless biped**

- The preceding is an infamous definition attributed to Plato; Diogenes the Cynic famously plucked a chicken and proclaimed “Behold, a man!”

# *Caveat*

Not all definitions that pass such tests are **useful**



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**Alan Rутtenberg =<sub>def</sub> Human being who had \$1 in his pocket 9-25-24**

Not all definitions that pass such tests **reflect the world**

**Squond =<sub>def</sub> A round square**

# *Avoid Negative Language*

- Definitions should – to the extent possible – avoid defining terms negatively, as this often results in confusion
- Defining terms negatively often:
  - Provides no implicit or explicit end point
  - Obscures rather than illuminates
  - Implies an incorrect bifurcation of classes

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# *Where to Stop?*

- Pressure to define negatively often stems from ignorance about the nature of what is being defined
- Such defining in ignorance has no end point, one can continue adding “non-” or “not” clauses excluding extensions
- A better strategy is to work harder to identify the nature of the entity in question

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# *Obscurity*

- Negation tells us little about what an entity is
- Examples:
  - Defining cat as “not a dog” says very little about cats
  - Anselm defining “God” as that for which none greater can be conceived tells us little about God
  - Epicurus defined death as the absence of sensation...



# *Obscurity*

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On the island of Knights and Knaves, everyone is either a Knave or a Knight. Knights always tell the truth and Knaves always lie. You have encountered a group of islanders, and want to know who is a knave and who is a knight. The islanders have made some statements about each other - each statement should be taken independently: each is either a true statement or a false statement.

You have met a group of 3 islanders. Their names are Quentin, Vincent, and Zoro.

Vincent says: Zoro never lies.

Vincent says: Quentin never lies.

Zoro says: Quentin is my type.

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# *Incorrect Bifurcation*

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**The complement of a class is not necessarily a class**

# *Internal vs Eternal Negation*

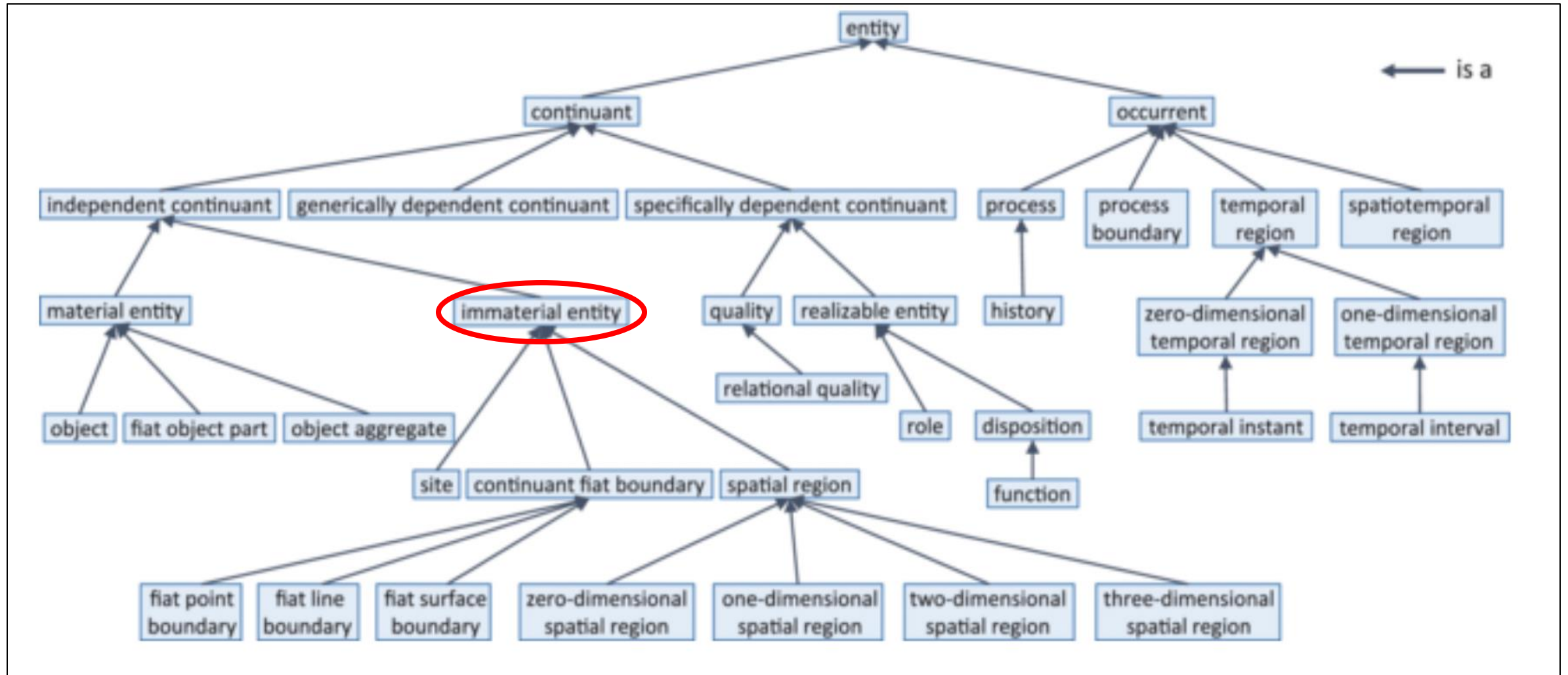
- Defining entities in negative terms runs the risk of confusing **internal** and **external** negation
- External negation bifurcates **all logical space**, e.g. entity that does not smoke
- Internal negation bifurcates **logical space within a class**, e.g. person who does not smoke



# *Caveat*

- That said, if one is careful about the distinction between internal and external negation, negative definitions can be acceptable

# *Immaterial Entity*



# *Caveat*

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**Immaterial Entity =<sub>def</sub> An independent continuant which is such that there is no time when it has a material entity as continuant part**

- Immaterial entity is **disjoint** from Material Entity, so the parent class Independent Continuant is appropriately bifurcated

# *Individual Exercise*

- *Do not gather into groups*; rather, provide a definition based on your own knowledge for the following terms

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**Armed Forces**

**Military**

**Do not use outside research**

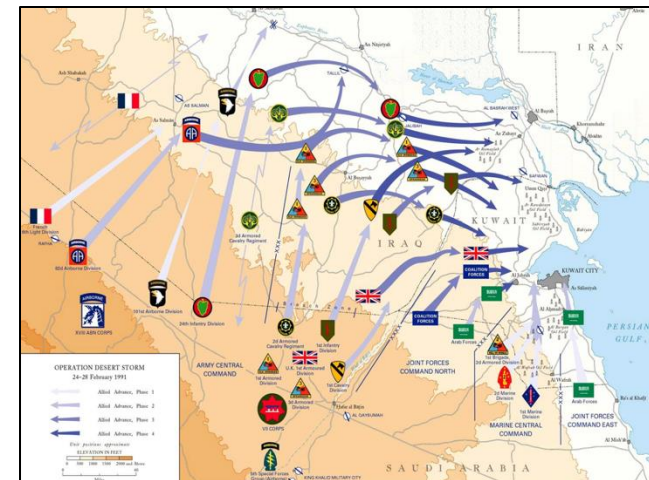
# *Directions of Fit for Ontology Engineering*

- Ontology engineering strategies can be distinguished by direction of fit
  - **World-to-Word:** Make world fit the words, e.g. **conceptualism**
  - **Word-to-World:** Make words fit the world, e.g. **realism**



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Channel's Joints

(S//NF) Iraq's Continuing Programs  
for Weapons of Mass Destruction



# *Conceptualism*

- “An ontology is a specification of a conceptualization” –*Gruber, 1992*
- Interpreted as claiming that ontologies represent **concepts**
- “Taking a more pragmatic view, one can say that ontology is a tool and product of engineering and thereby defined by its use.” –*Gruber, 2009*
- Interpreted as claiming ontologies represent **what they need to represent**

# *Realism*

- Ontologies are a specification of **the world**

If we attempt to go from the words we use to the world, it is unlikely  
that we will end up in the same place

If we attempt to go from the world to the words we use, it is more  
likely we will remain coordinated

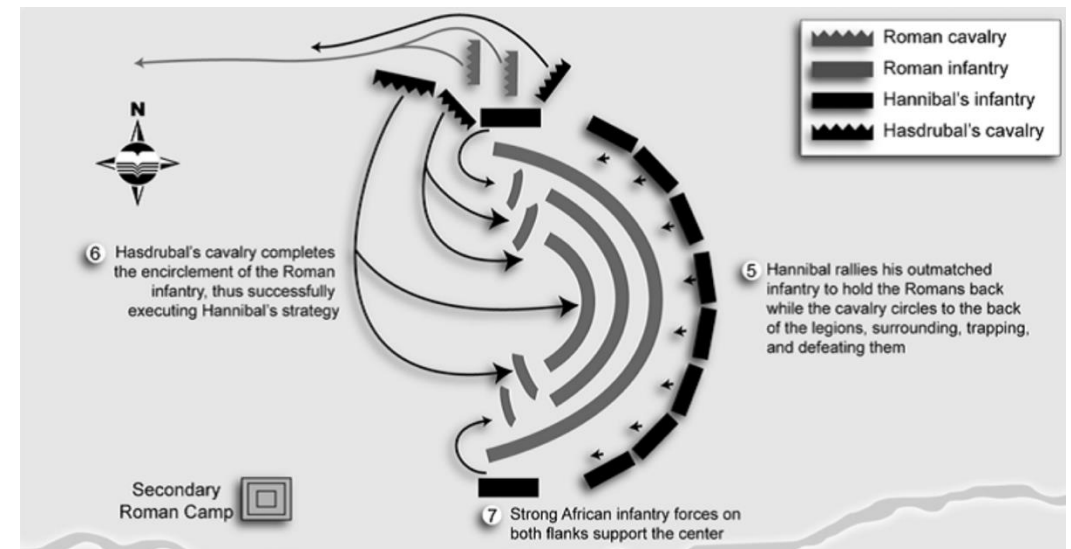
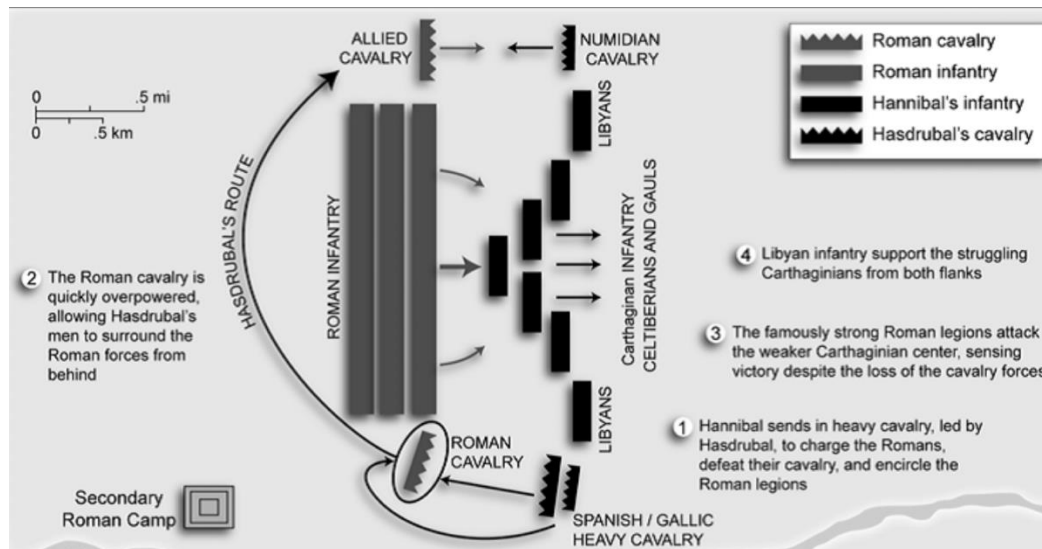


# *Outline*

- Definitions Revisited
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# Classical Warfare

- Battle of Cannae; Second Punic War
- Romans pushed through the center of Hannibal's troops, with the goal of splitting his army; Hannibal's elite troops encircled the Roman army



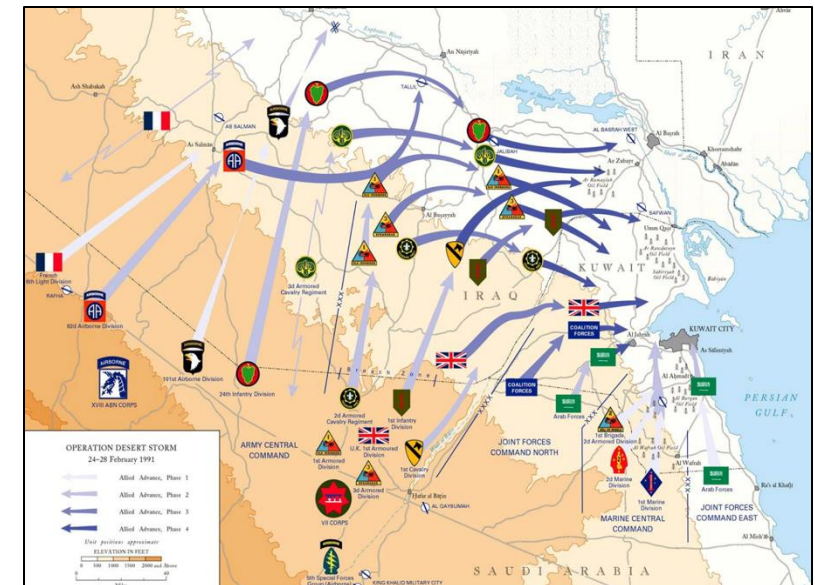
# *Early Modern Warfare*

- Characterized by widespread use of gun powder, explosives, and professional armies
- Greater reliance on strategy and intelligence
- Massive increase in number of deaths



# *Modern Warfare*

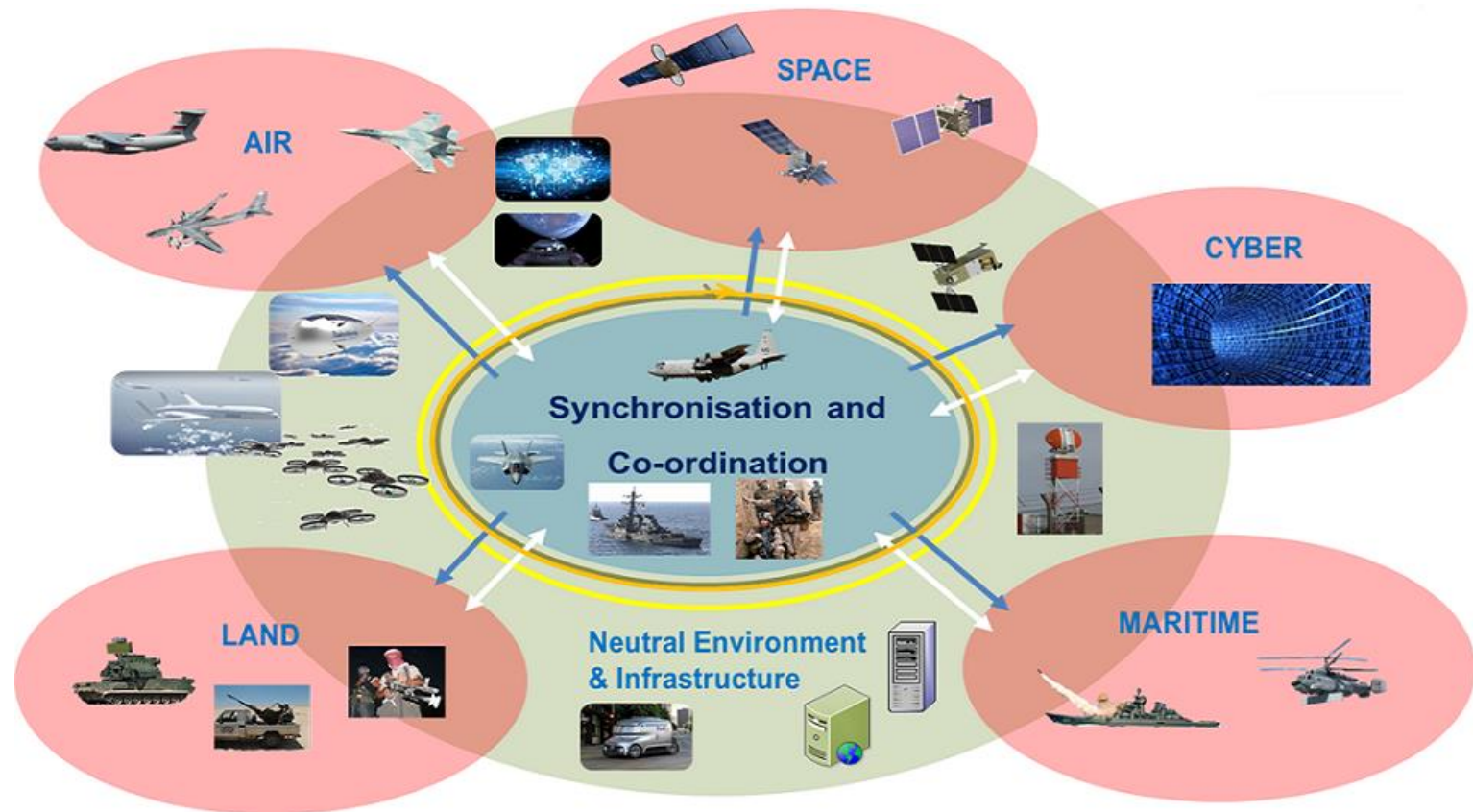
- Characterized by weapons of mass destruction, stealth, and massive coordination of resources
- Expansion of routine operational environments to include land, sea, and air, as well as digital domains that stretched across participating nations





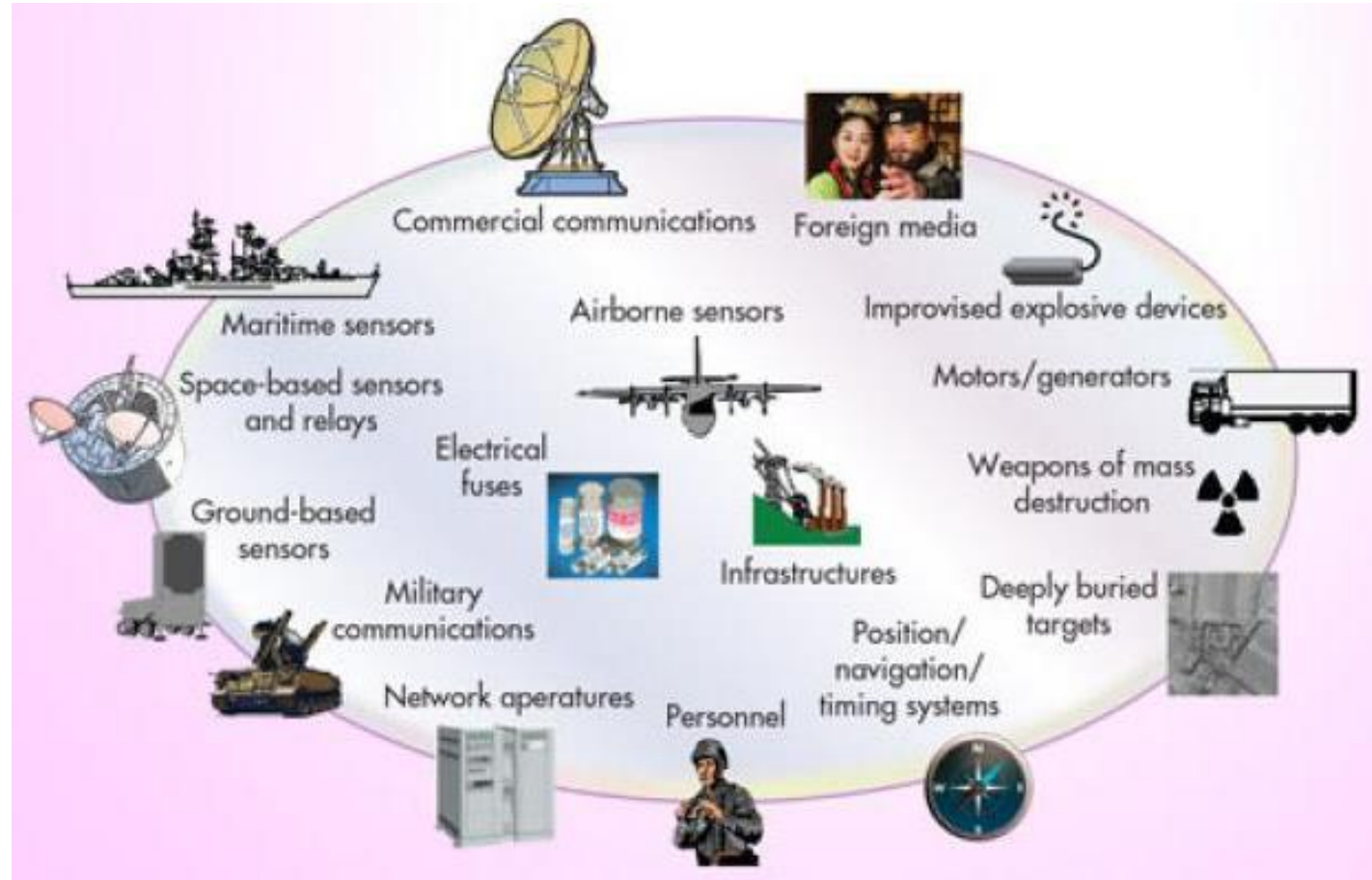
# *Modern Warfare*

- Illustration of the electromagnetic warfare domain and required coordination during engagements
- Traditional warfare has focused on kinetic attack and defense, i.e. physical damage to people and infrastructure

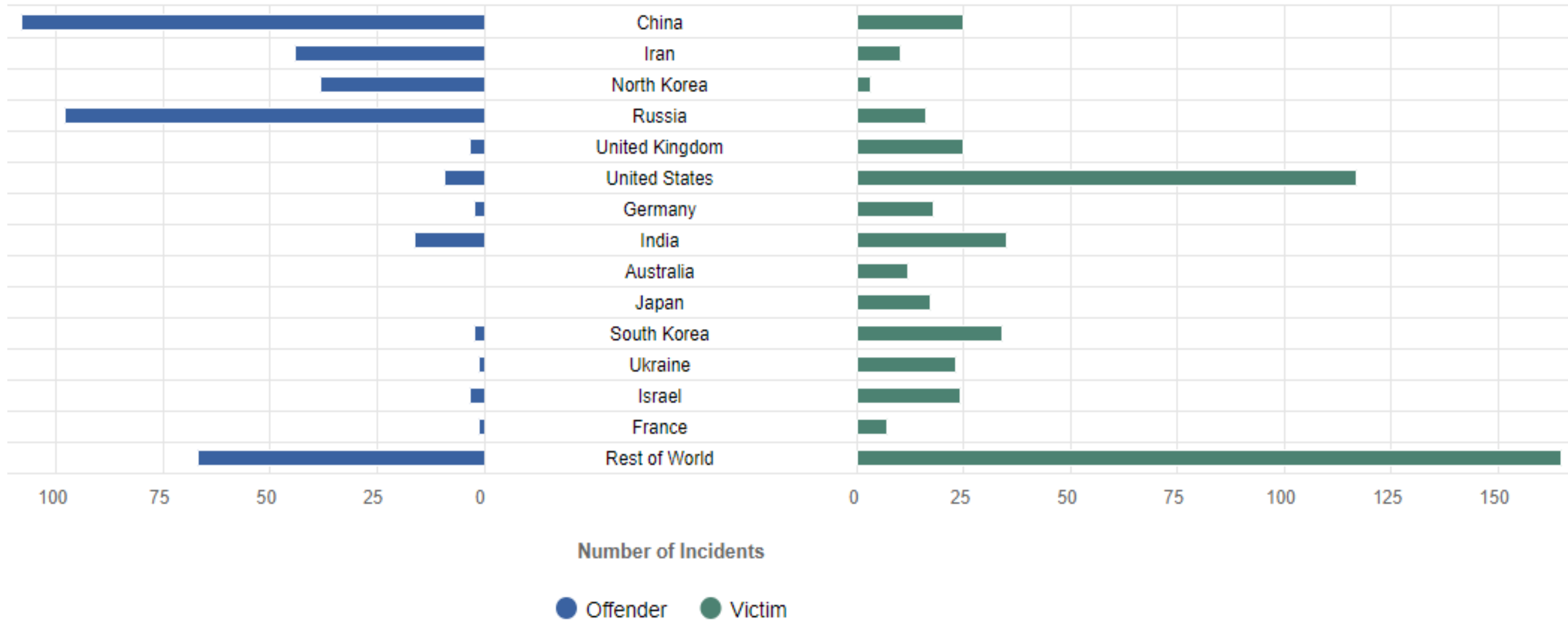


# *Modern Warfare*

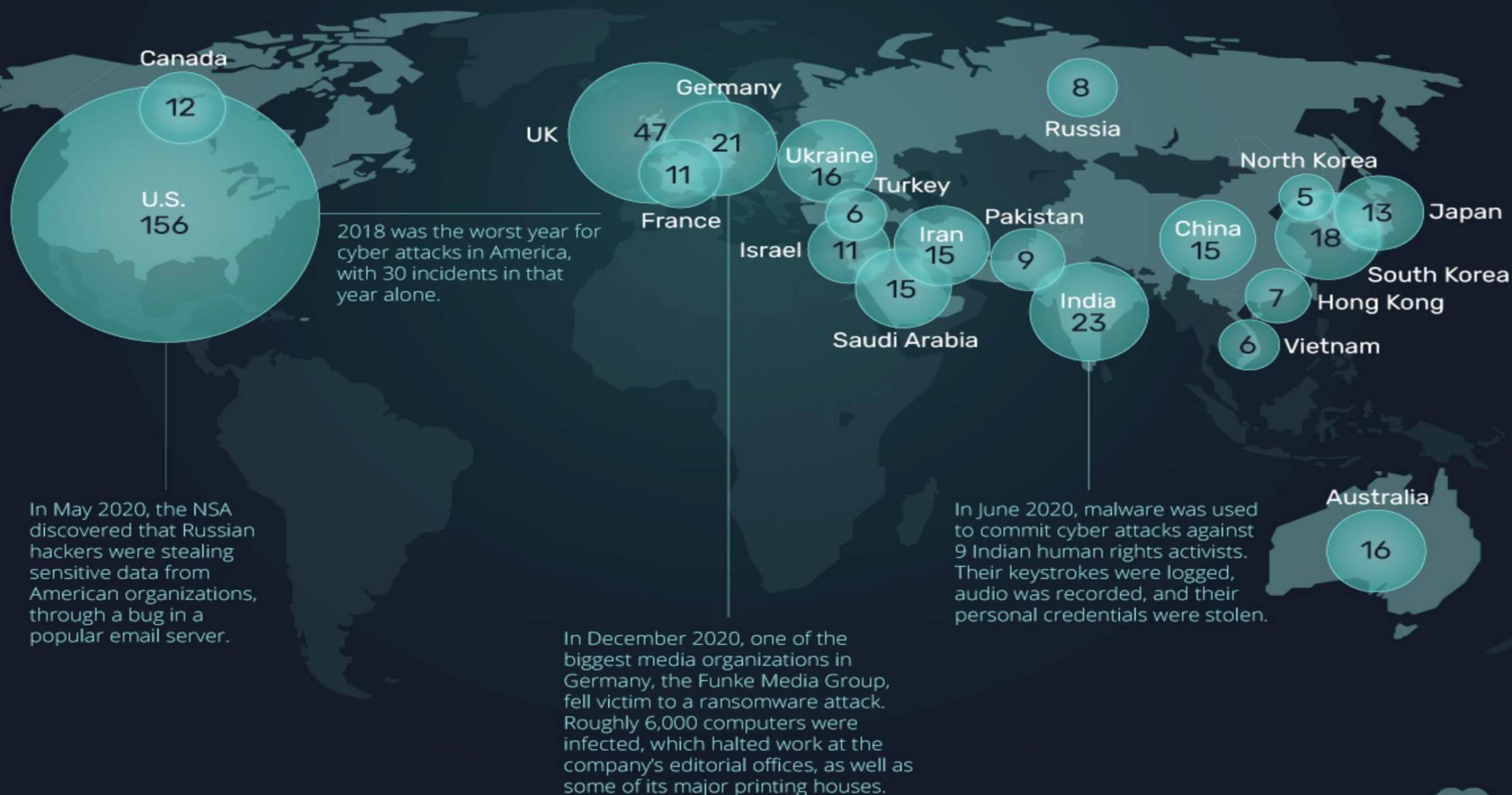
- Illustration of intersecting operational areas requiring dedicated attention during engagement
- Modern warfare shifts towards non-kinetic attack and defense, i.e. towards digital or cyber attacks



# *Significant Cyber Incidents since 2006*



**i** **"Significant"** cyber attacks mean hacks into a country's government agencies, defense and high-tech companies, or crimes with losses of more than \$1M.



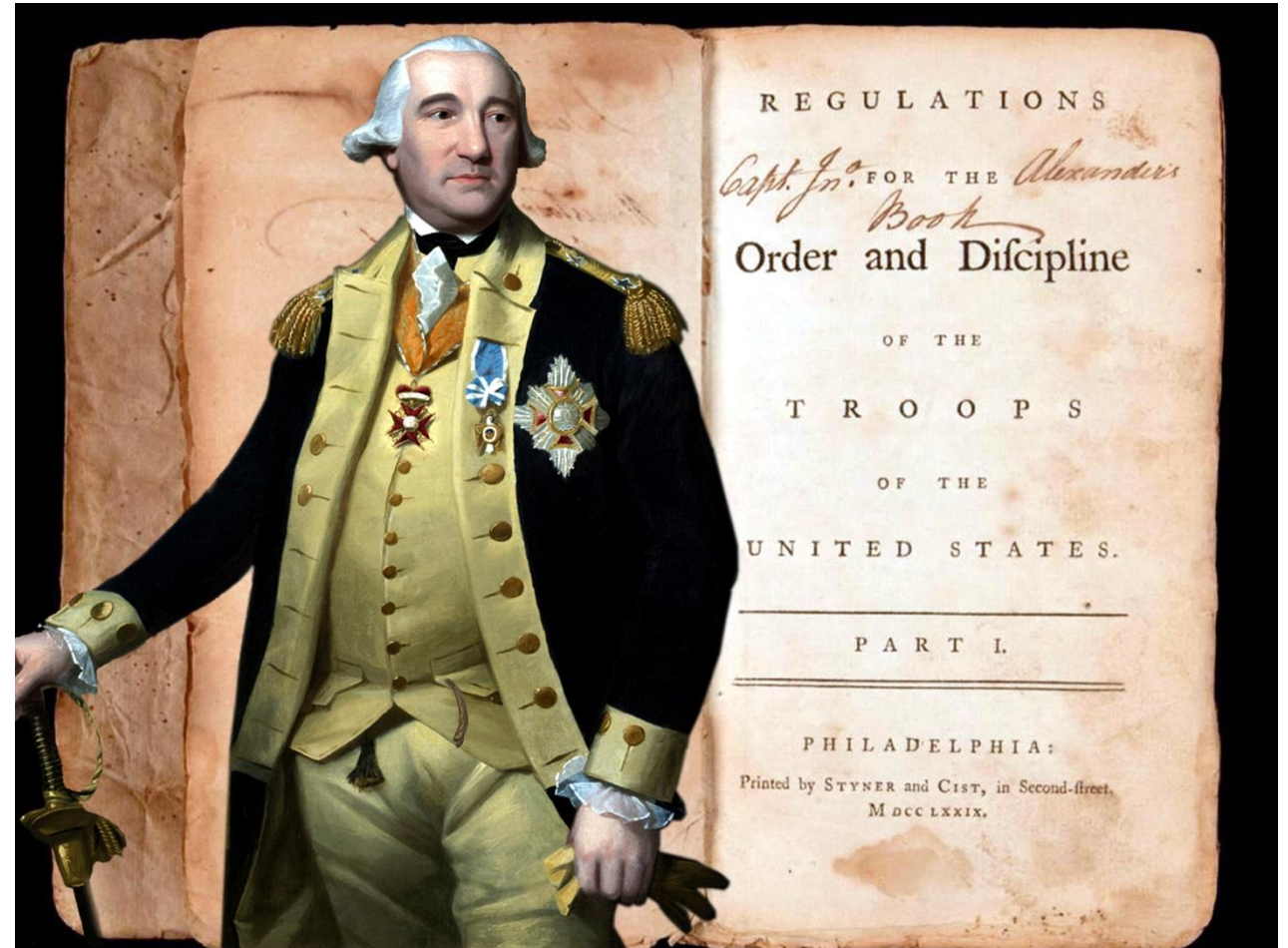


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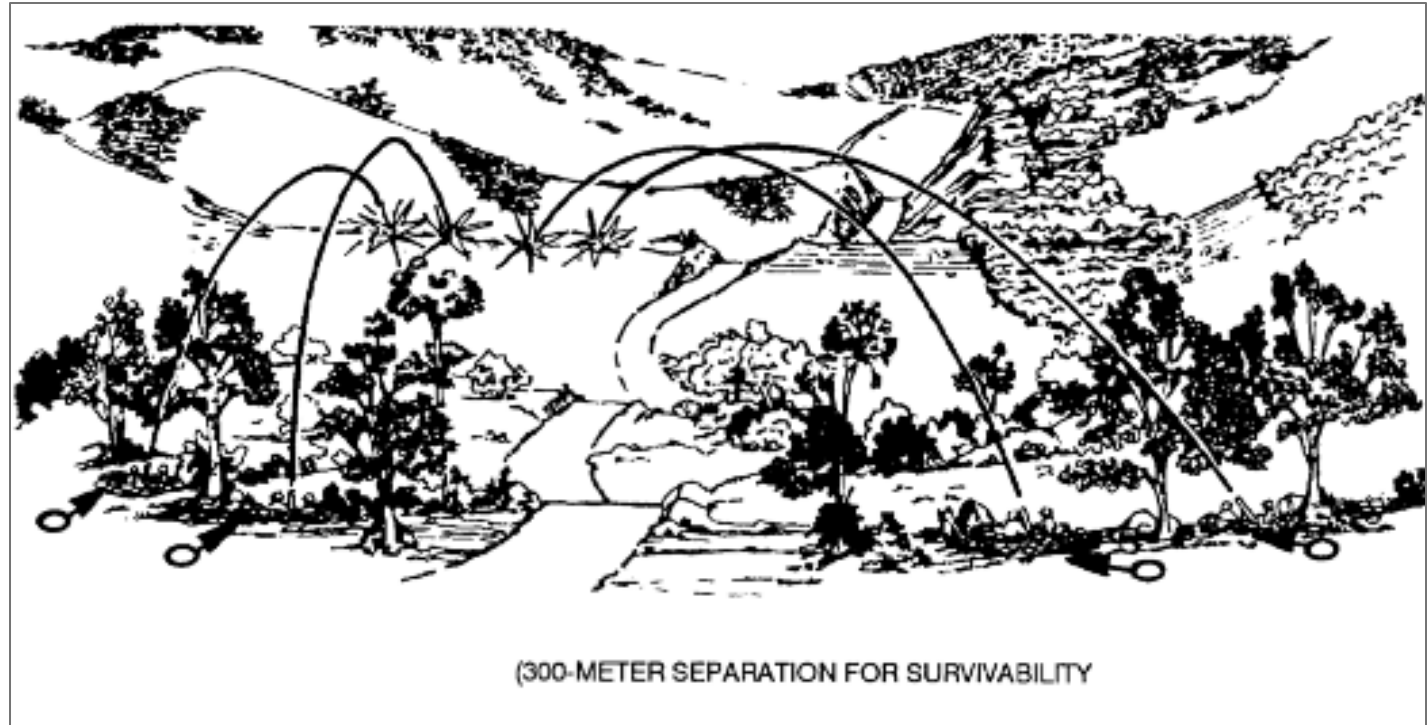
# *First U.S. Army Drill Manual*

- *Regulations for the Order and Discipline of the Troops of the United States*
- Compiled by Baron de Steuben, Inspector General of the Continental Army, 1779
- Codified strategies for joint military efforts during engagement



# *Doctrine of Massing Fires*

- Coordinated dispersed artillery on single target
- Required:
  - Real-time coordination
  - Common operational view
  - Interoperable artillery
- Achieved by:
  - New information support strategies and governance
  - New training



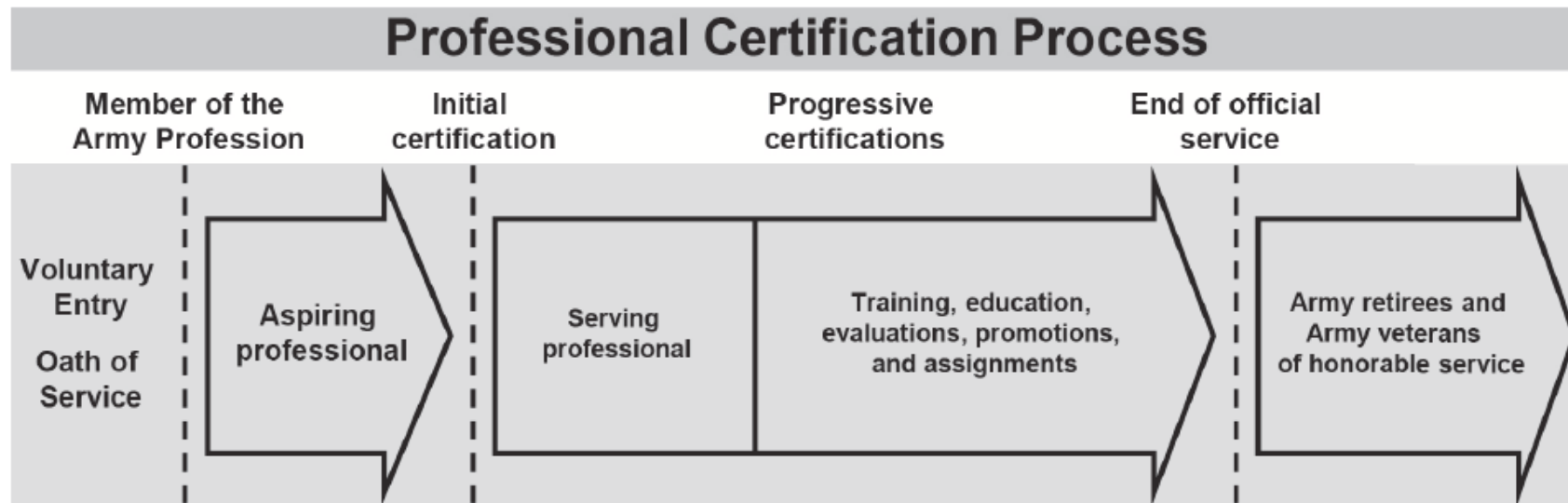
# *Importance of Standardization*

- Massing fires was a strategy that could be realized by militaries long before Steuben outlined it in 1779
- The actual doctrine for massing fires was approved *only in 1939*
- The codification of massing fires enabled progressive refinement of this military capability over time

**Aided by professionalization of armed forces, including signals indicating who can be trusted in battle, training, etc.**

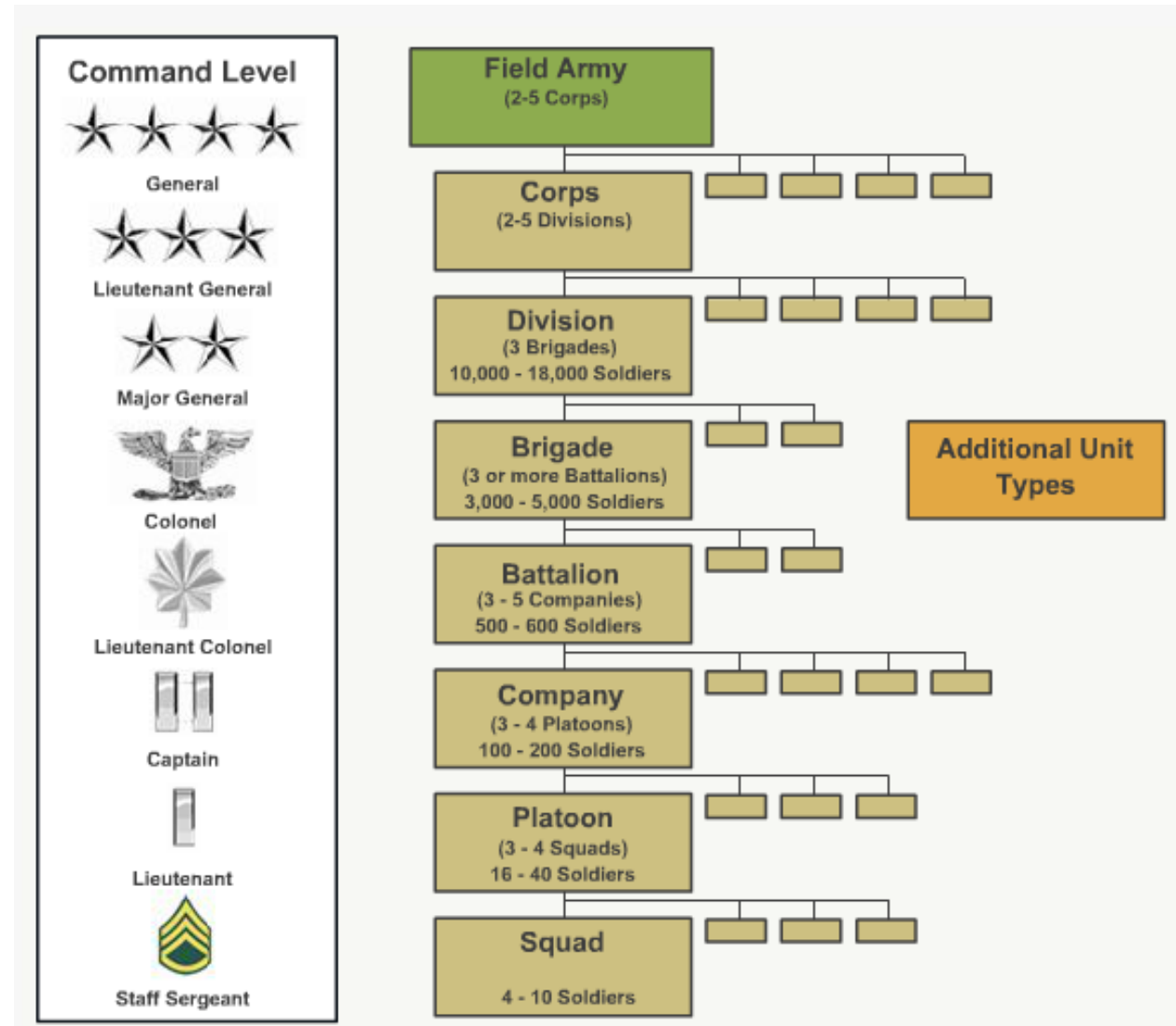
# *Professional Militaries*

- The goal of training, credentialing, evaluating, and continuous re-engineering is to create habits aimed towards pre-coordination of intermeshed plans and different levels, so soldiers will coordinate spontaneously when executing the sorts of actions for which they have been trained.



# *Rank*

- Creating new types of credentials through which soldiers may be promoted, provides trustworthy standards for vetting expertise
- Which in turn creates new strategic and operational team arrangements and activities
- See Shane Babcock's *Military Rank Ontology*





# *Epistemic Communities*



# *Anticipating Massing Intelligence Fires*

- 9-11 illustrated challenges of predicting massing fires from intelligence failures
- Prediction requires:
  - Real-time information sharing and revising
  - Common operational perspective
  - Interoperability across activities
- Which will require:
  - New information support strategies
  - Semantic interoperability across data
  - New governance and training for both humans and machines





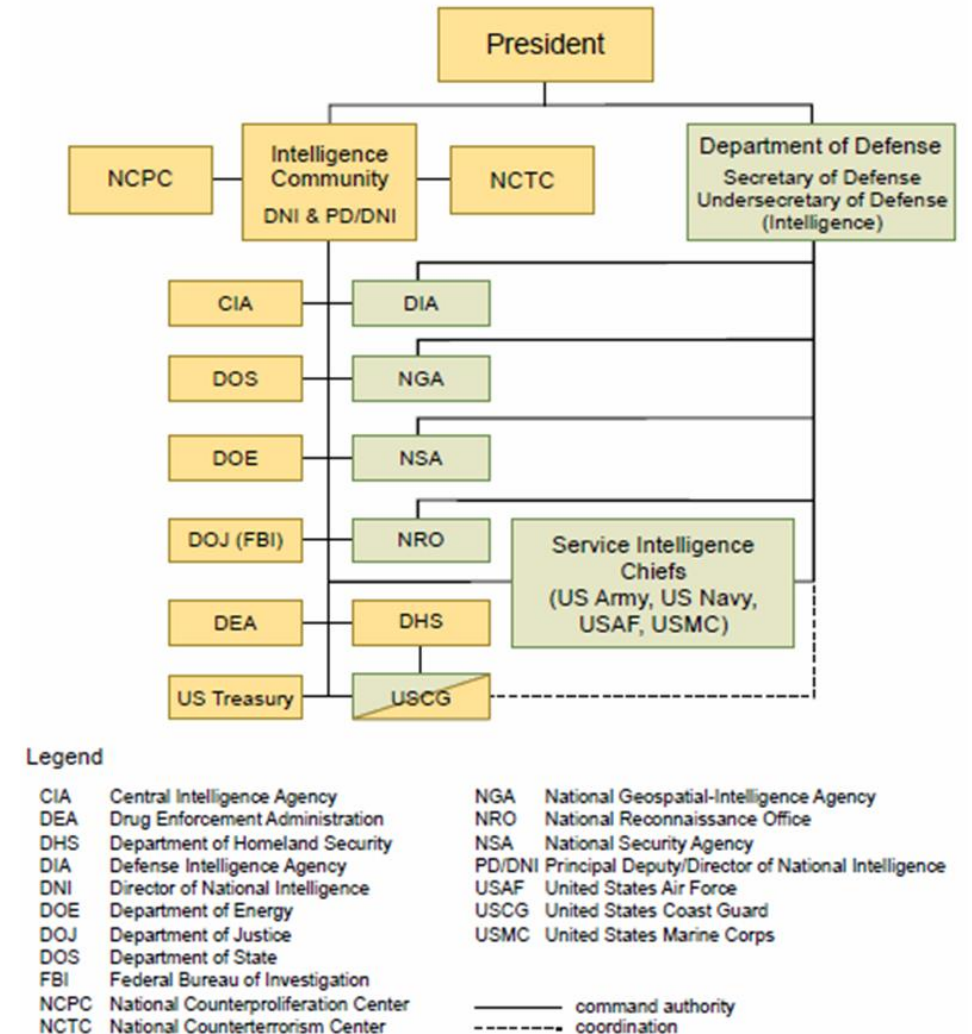
# *Anticipating Massing Intelligence Fires*

- Agencies too need signals to understand who can be trusted
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# *U.S. Intelligence Community (IC)*

- U.S. government agencies concerned with intelligence activity, either in an oversight, managerial, support, or participatory role.
- The IC is an **epistemic community**:
  - Normative beliefs about the purpose
  - Beliefs based on investigating problems in their domain
  - Standards of accuracy for analyses
  - Common community goals



# *Common Operational Perspective*

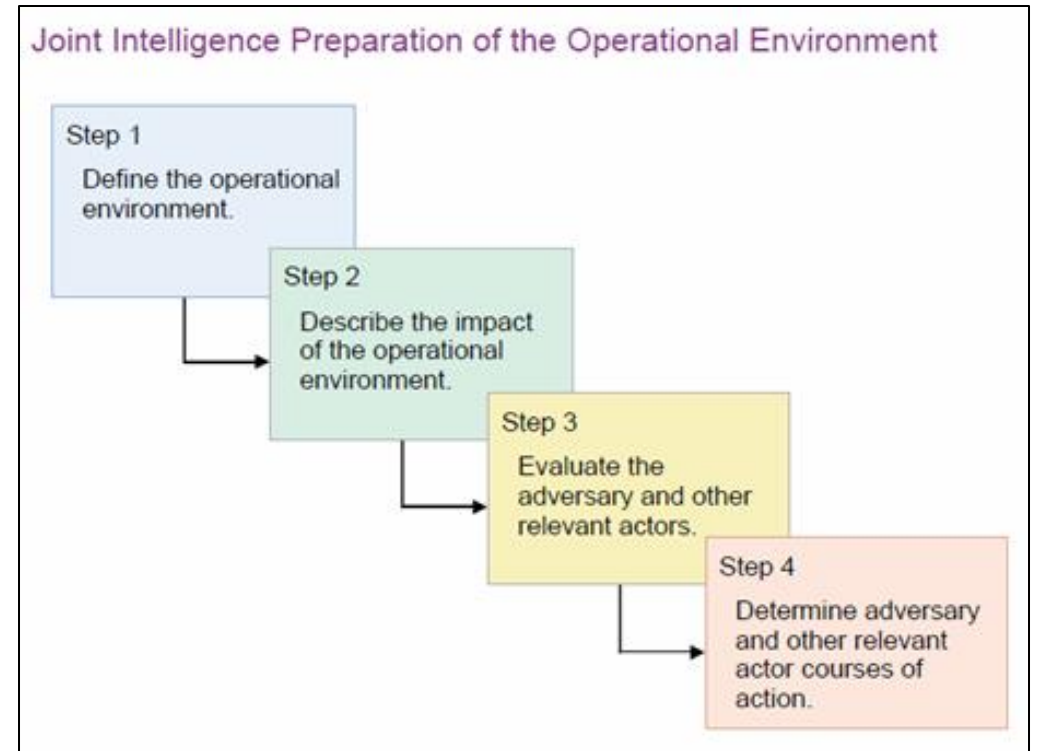
- Common operational perspective connects data to intelligence

- Prediction requires:

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- Common operational perspective
- Interoperability across activities

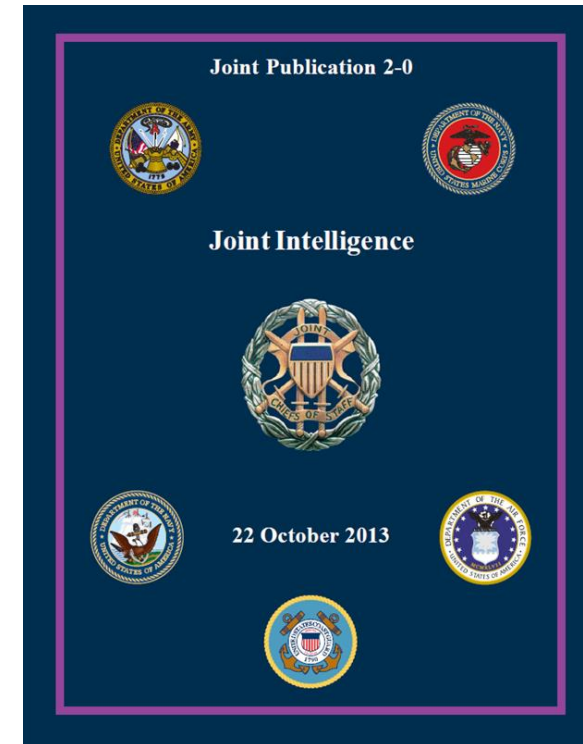
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# *Joint Publications*

- Activity interoperability involves enforceable prescriptions
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# ***DOD Definition of Interoperability***

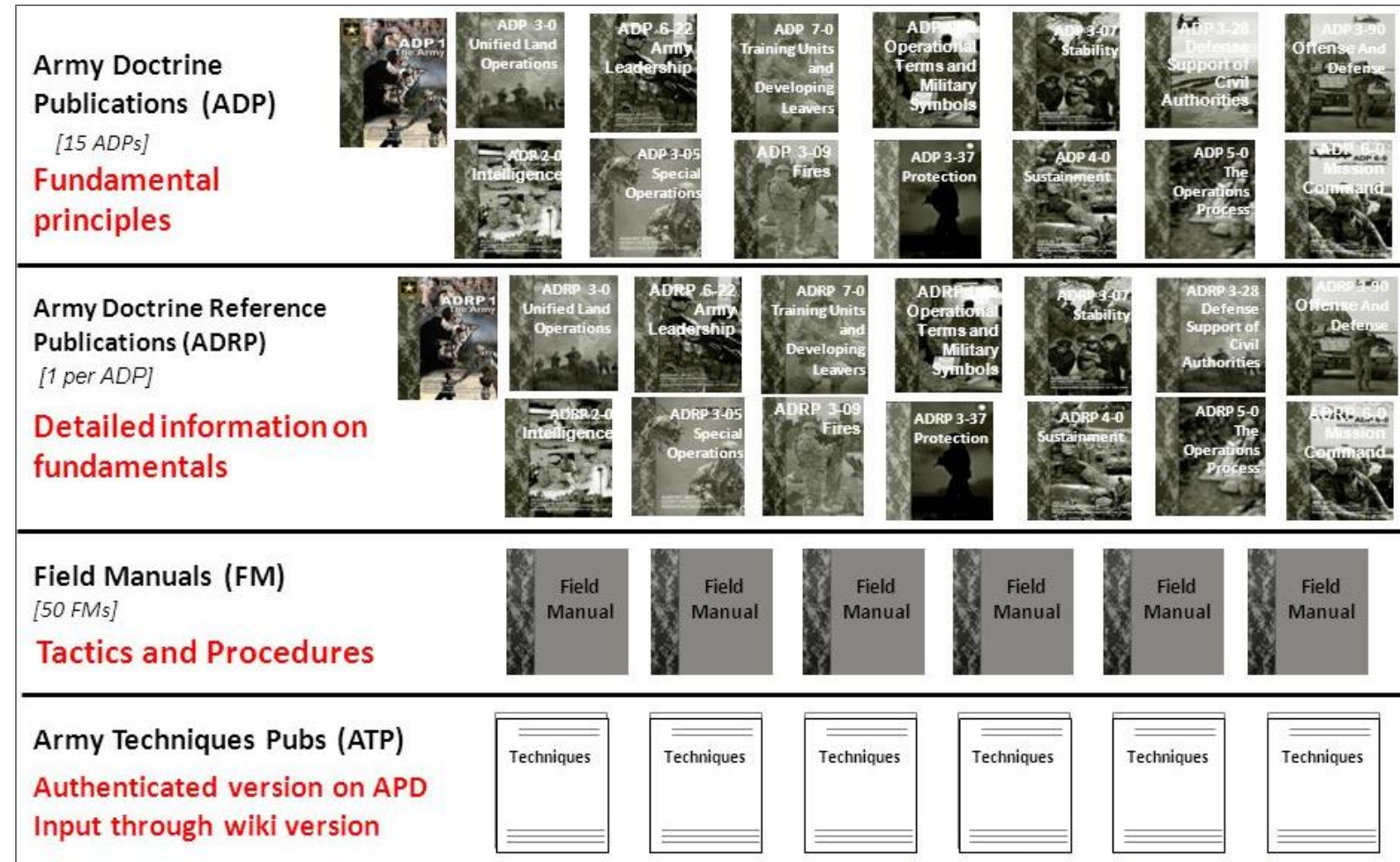
- “The ability of systems, units, or forces to provide data, information, material, and services to, and accept the same from, other systems, units, or forces, and to **use the data, information, material, and services exchanged to enable them to operate effectively together.**” -*DOD Instruction 8330.01*

**Importantly, this is not semantic interoperability**



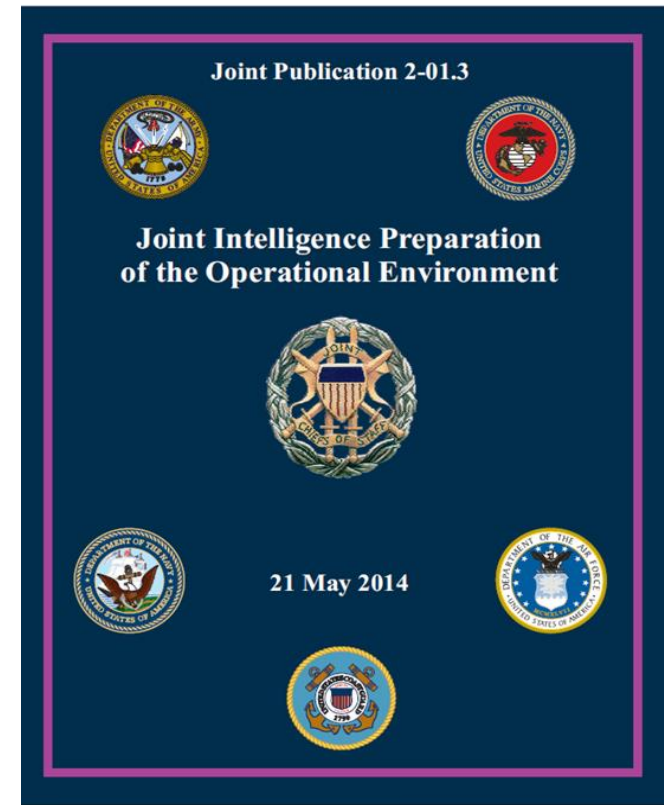
# *Importance of Standardization*

- Activity interoperability involves **enforceable prescriptions internal** to and across agencies
- Such as the Army Doctrine Publications, Reference, Field Manuals, and Technique Pubs



# *Importance of Standardization*

- Activity interoperability involves enforceable prescriptions internal to and **across agencies**
- “Governs the analytical process used by joint intelligence organizations to produce intelligence estimates and other intelligence products in support of the joint force commander’s decision-making process.”





# Joint Doctrine Hierarchy

Capstone Pubs

Keystone Pubs

Doctrine Pubs

Joint Doctrine  
1

Joint  
Personnel  
Support  
1-0

Joint  
Intelligence  
2-0

Joint  
Operations  
3-0

Joint  
Logistics  
4-0

Joint  
Planning  
5-0

Joint  
Communications  
System  
6-0

DOD Dictionary  
of Military and  
Associated  
Terms

Legal Support to  
Military  
Operations  
1-04

Joint and National  
Intelligence Support to  
Military Operations  
2-01

Countering Air  
and  
Missile Threats  
3-01

Peace  
Operations  
3-07.3

Military  
Information  
Support  
Operations  
3-13.2

Foreign Internal  
Defense  
3-22

Joint  
Task Force  
Headquarters  
3-33

Joint  
Targeting  
3-60

The Defense  
Transportation  
System  
4-01

Mobilization  
Planning  
4-05

Joint  
Electromagnetic  
Spectrum Operations  
JP 6-01

Financial Management  
Support in Joint  
Operations  
1-06

Counterintelligence  
and Human  
Intelligence in Joint  
Operations  
2-01.2

Amphibious  
Operations  
3-02

Counterdrug  
Operations  
3-07.4

Operations  
Security  
3-13.3

Counterinsurgency  
3-24

Joint Engineer  
Operations  
3-34

Public Affairs  
3-61

Sealift Support  
to Joint  
Operations  
4-01.2

Mortuary  
Affairs  
4-06

Joint Intelligence  
Preparation of the  
Operational  
Environment  
2-01.3

Amphibious  
Embarkation and  
Debarcation  
3-02.1

Interorganizational  
Cooperation  
3-08

Military  
Deception  
3-13.4

Countering  
Threat Networks  
3-25

Joint Deployment  
and Redeployment  
Operations  
3-35

Detainee  
Operations  
3-63

Joint  
Terminal  
Operations  
4-01.5

Logistics in  
Support of  
Multinational  
Operations  
4-08

Geospatial  
Intelligence Support  
to Joint Operations  
2-03

Joint  
Interdiction  
3-03

Joint  
Fire Support  
3-09

Space  
Operations  
3-14

Counterterrorism  
3-26

Countering  
Weapons of Mass  
Destruction  
3-40

Noncombatant  
Evacuation  
Operations  
3-68

Joint Logistics  
Over-the-Shore  
4-01.6

Distribution  
Operations  
4-09

Joint Shipboard  
Helicopter and Tiltrotor  
Aircraft Operations  
3-04

Close Air  
Support  
3-09.3

Barriers,  
Obstacles, &  
Mine Warfare  
3-15

Homeland  
Defense  
3-27

Chemical, Biological,  
Radiological, and  
Nuclear Response  
3-41

Nuclear  
Operations  
3-72

Joint Health  
Services  
4-02

Operational  
Contract  
Support  
4-10

Special  
Operations  
3-05

Joint Security  
Operations in  
Theater  
3-10

Counter-  
Improvised  
Explosive Device  
Operations  
3-15.1

Defense Support  
of Civil  
Authorities  
3-28

Joint Explosive  
Ordnance  
Disposal  
3-42

Joint  
Electromagnetic  
Spectrum Operations  
JP 3-XX

Joint Bulk  
Petroleum and  
Water Doctrine  
4-03

Joint  
Contingency  
Basing  
4-04

Unconventional  
Warfare  
3-05.1

Operations in  
Chemical, Biological,  
Radiological, and Nuclear  
Environments  
3-11

Multinational  
Operations  
3-16

Foreign  
Humanitarian  
Assistance  
3-29

Personnel  
Recovery  
3-50

Joint  
Urban  
Operations  
3-06

Cyberspace  
Operations  
3-12

Air Mobility  
Operations  
3-17

Command and  
Control of Joint  
Air Operations  
3-30

Joint  
Airspace  
Control  
3-52

Stability  
3-07

Information  
Operations  
3-13

Joint Forcible  
Entry  
Operations  
3-18

Command and  
Control of Joint  
Land Operations  
3-31

Civil-Military  
Operations  
3-57

Antiterrorism  
3-07.2

Electronic  
Warfare  
3-13.1

Security  
Cooperation  
3-20

Command and  
Control of Joint  
Maritime  
Operations  
3-32

Meteorological and  
Oceanographic  
Operations  
3-59

## LEGEND 24 April 2018 Joint Doctrine Pubs

- Joint Pubs in Maintenance/Initiation Stage
  - Normal Revision
  - Change in Lieu of Revision
  - Joint pubs to be consolidated or deleted pending development or revision of superceding publications
  - Development (New)
  - Joint Test Publication
- 80 Approved (39 in Revision)
- 3 Under Development

\* Joint Pubs with pending change

To Be Removed from Joint Doctrine

Access to these JPs at <https://jdeis.js.mil/jdeis/index.jsp> requires CAC.

Classified Pubs Pubs with Classified Appendices



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Joint Planning  
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System  
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1-04

Joint and National Intelligence Support to Military Operations  
2-01

Countering Air and Missile Threats  
3-01

Peace Operations  
3-07.3

Military Information Support Operations  
3-13.2

Foreign Internal Defense  
3-22

Joint Task Force Headquarters  
3-33

Joint Targeting  
3-60

The Defense Transportation System  
4-01

Mobilization Planning  
4-05

Joint Electromagnetic Spectrum Operations  
JP 6-01

Financial Management Support in Joint Operations  
1-06

Counterintelligence and Human Intelligence in Joint Operations  
2-01.2

Amphibious Operations  
3-02

Counterdrug Operations  
3-07.4

Operations Security  
3-13.3

Counterinsurgency  
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Joint Engineer Operations  
3-34

Public Affairs  
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Sealift Support to Joint Operations  
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Joint Intelligence Preparation of the Operational Environment  
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Amphibious Embarkation and Debarkation  
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Interorganizational Cooperation  
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Detainee Operations  
3-63

Joint Terminal Operations  
4-01.5

Logistics in Support of Multinational Operations  
4-08

Geospatial Intelligence Support to Joint Operations  
2-03

Joint Interdiction  
3-03

Joint Fire Support  
3-09

Space Operations  
3-14

Counterterrorism  
3-26

Countering Weapons of Mass Destruction  
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Chemical, Biological, Radiological, and Nuclear Response  
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Nuclear Operations  
3-72

Joint Health Services  
4-02

Operational Contract Support  
4-10

Special Operations  
3-05

Joint Security Operations in Theater  
3-10

Counter-Improvised Explosive Device Operations  
3-15.1

Defense Support of Civil Authorities  
3-28

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JP 3-XX

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Joint Contingency Basing  
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Operations in Chemical, Biological, Radiological, and Nuclear Environments  
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Multinational Operations  
3-16

Foreign Humanitarian Assistance  
3-29

Personnel Recovery  
3-50

Joint Urban Operations  
3-06

Cyberspace Operations  
3-12

Air Mobility Operations  
3-17

Command and Control of Joint Air Operations  
3-30

Joint Airspace Control  
3-52

Stability  
3-07

Information Operations  
3-13

Joint Forcible Entry Operations  
3-18

Command and Control of Joint Land Operations  
3-31

Civil-Military Operations  
3-57

Antiterrorism  
3-07.2

Electronic Warfare  
3-13.1

Security Cooperation  
3-20

Command and Control of Joint Maritime Operations  
3-32

Meteorological and Oceanographic Operations  
3-59

## LEGEND 24 April 2018 Joint Doctrine Pubs

- Joint Pubs in Maintenance/Initiation Stage
  - Normal Revision
  - Change in Lieu of Revision
  - Joint pubs to be consolidated or deleted pending development or revision of superceding publications
  - Development (New)
  - Joint Test Publication
- 80 Approved (39 in Revision)
- 3 Under Development

\* Joint Pubs with pending change

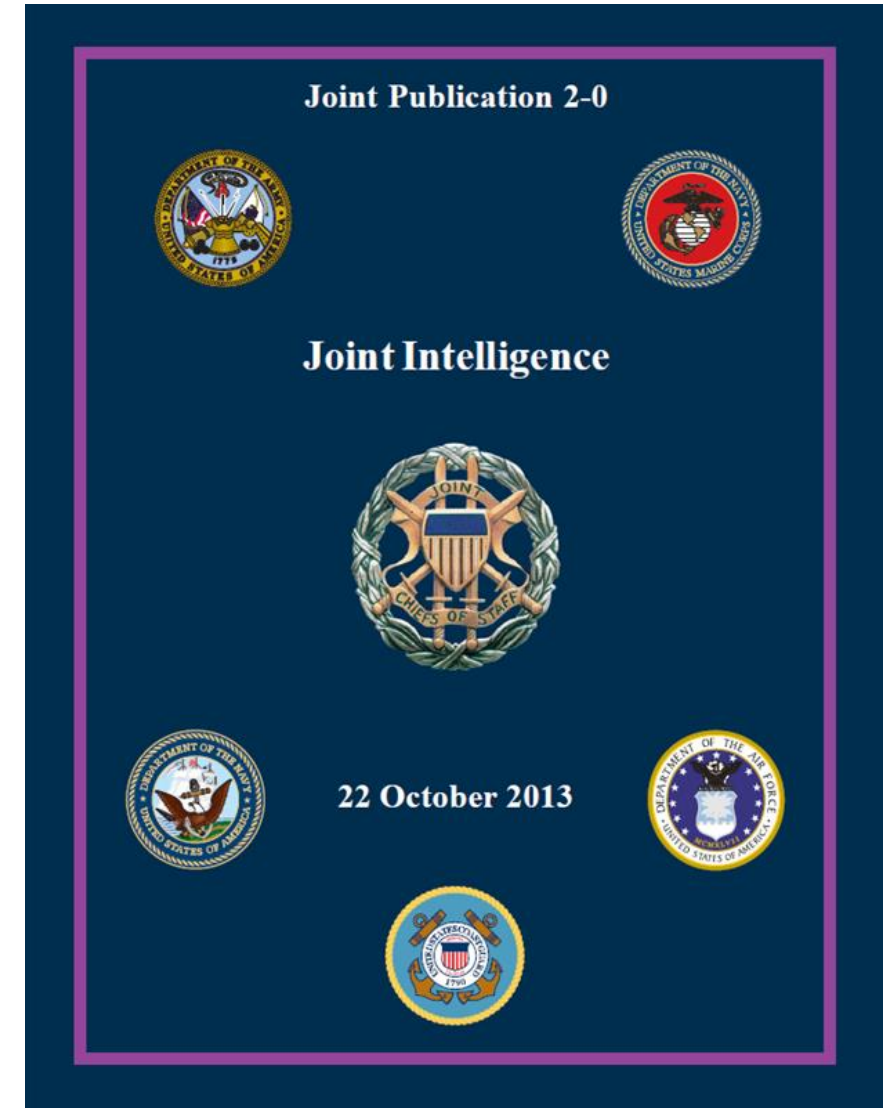
To Be Removed from Joint Doctrine

Access to these JPs at <https://jdeis.js.mil/jdeis/index.jsp> requires CAC.

Classified Pubs Pubs with Classified Appendices

# *Joint Publication Doctrine*

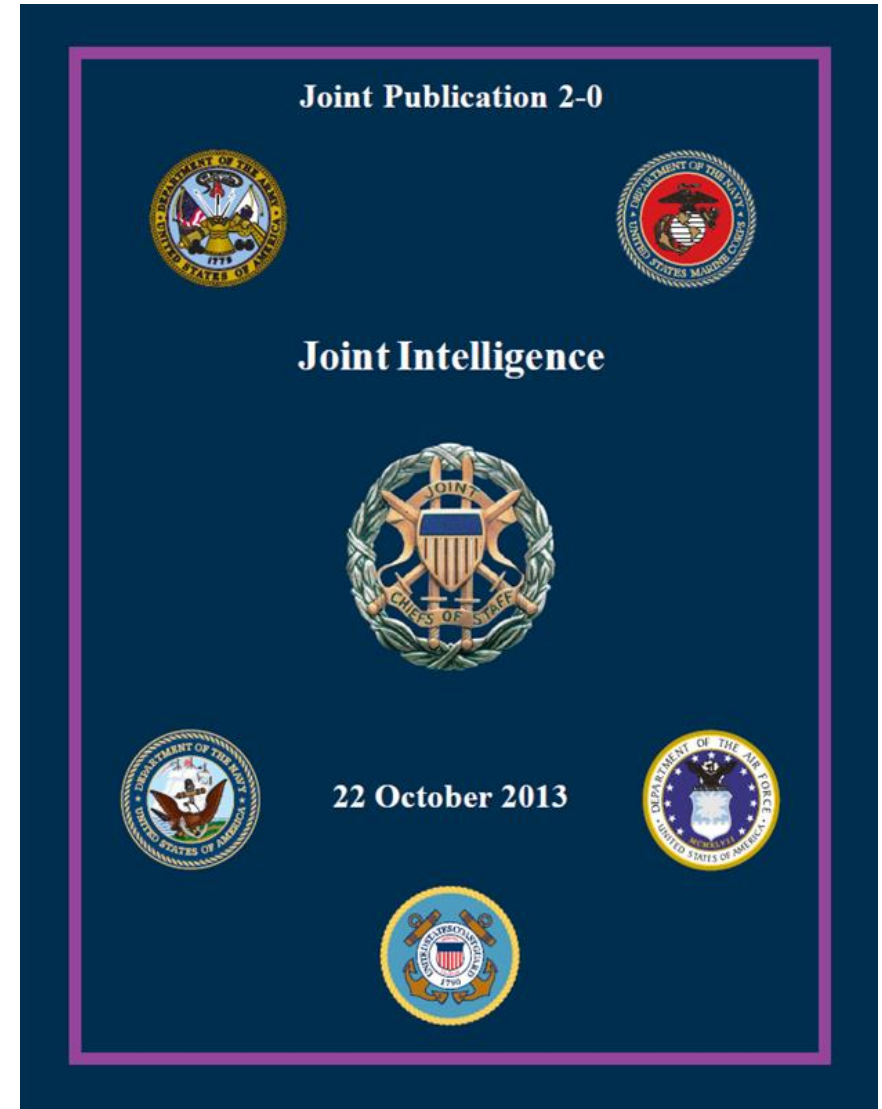
- Provides authoritative body of consistent statements on:
  - How military forces conduct joint operations
  - How military plans are to be constructed
- As well as a common lexicon:
  - Which must be used by military planners and leaders
  - Which will be what those charged with execution of military plans will anticipate and understand



# *Joint Publication Doctrine*

**not necessarily coherent**

- Provides authoritative body of ~~consistent~~ statements on:
  - How military forces conduct joint operations
  - How military plans are to be constructed
- As well as a common lexicon:
  - Which must be used by military planners and leaders
  - Which will be what those charged with execution of military plans will anticipate and understand
  - ...*for humans*...





# *2021 DOD Dictionary Definitions*

- *Intelligence* =<sub>def</sub> The product resulting from the collection, processing, integration, evaluation, analysis, and interpretation of available information concerning foreign nations, hostile or potentially hostile forces or elements, or areas of actual or potential operations, as well as the activities that result in the product and the organizations engaged in such activities.
- *Joint Intelligence* =<sub>def</sub> Intelligence produced by elements of more than one service of the same nation.

**DOD Dictionary of  
Military and Associated Terms**

As of November 2021

# *2021 DOD Dictionary Definitions*

- *Intelligence* =<sub>def</sub> The product resulting from the collection, processing, integration, evaluation, analysis, and interpretation of available information concerning foreign nations, hostile or potentially hostile forces or elements, or areas of actual or potential operations, as well as **the activities that result in the product** and the organizations engaged in such activities.
- Counterexamples:
  - **Intelligence  $\neq$  Intelligence Gathering Activity**
  - **Agents getting proper sleep shouldn't count as intelligence**

DOD Dictionary of  
Military and Associated Terms

# *2021 DOD Dictionary Definitions*

- *Intelligence* =<sub>def</sub> The product resulting from the collection, processing, integration, evaluation, analysis, and interpretation of available information concerning foreign nations, hostile or potentially hostile forces or elements, or areas of actual or potential operations, as well as the activities that result in the product and **the organizations engaged in such activities.**
- Counterexamples:
  - **The CIA itself is not intelligence; it gathers intelligence**
  - **An agency's HR department doesn't gather intelligence**

**DOD Dictionary of  
Military and Associated Terms**

# *2021 DOD Dictionary Definitions*

- *Intelligence* =<sub>def</sub> The product resulting from the collection, processing, integration, evaluation, analysis, and interpretation of available information concerning foreign nations, hostile or potentially hostile forces or elements, or areas of actual or potential operations, as well as the activities that result in the product and the organizations engaged in such activities.
- That aside, this is **clearly specific** to military intelligence, and so could not serve as a general definition

DOD Dictionary of  
Military and Associated Terms

As of November 2021

# *2021 DOD Dictionary Definitions*

- *Intelligence* =<sub>def</sub> The product resulting from the collection, processing, integration, evaluation, analysis, and interpretation of available information concerning **foreign nations, hostile or potentially hostile forces or elements, or areas of actual or potential operations**, as well as the activities that result in the product and the organizations engaged in such activities.
- Counterexamples:
  - **Police gather intelligence on domestic criminal activity**
  - **Companies gather intelligence prior to merger**

**DOD Dictionary of  
Military and Associated Terms**

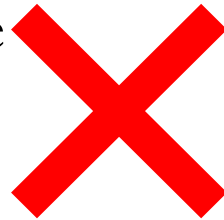
As of November 2021



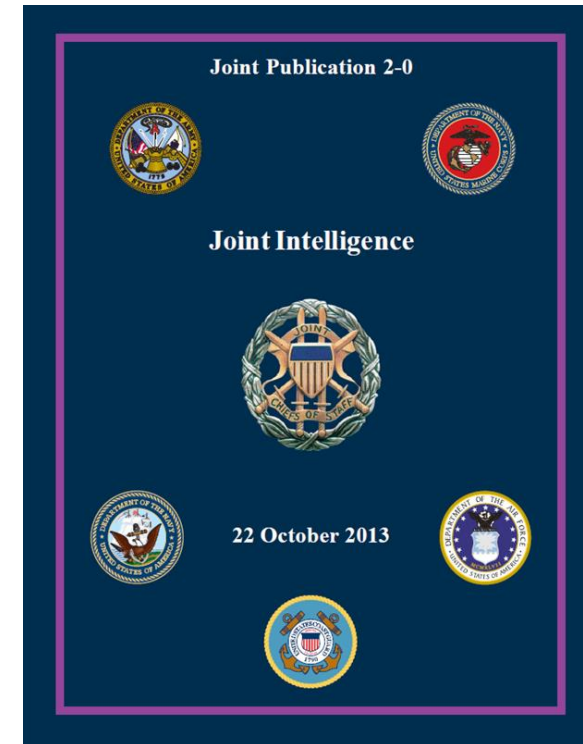
# *Joint Publications*

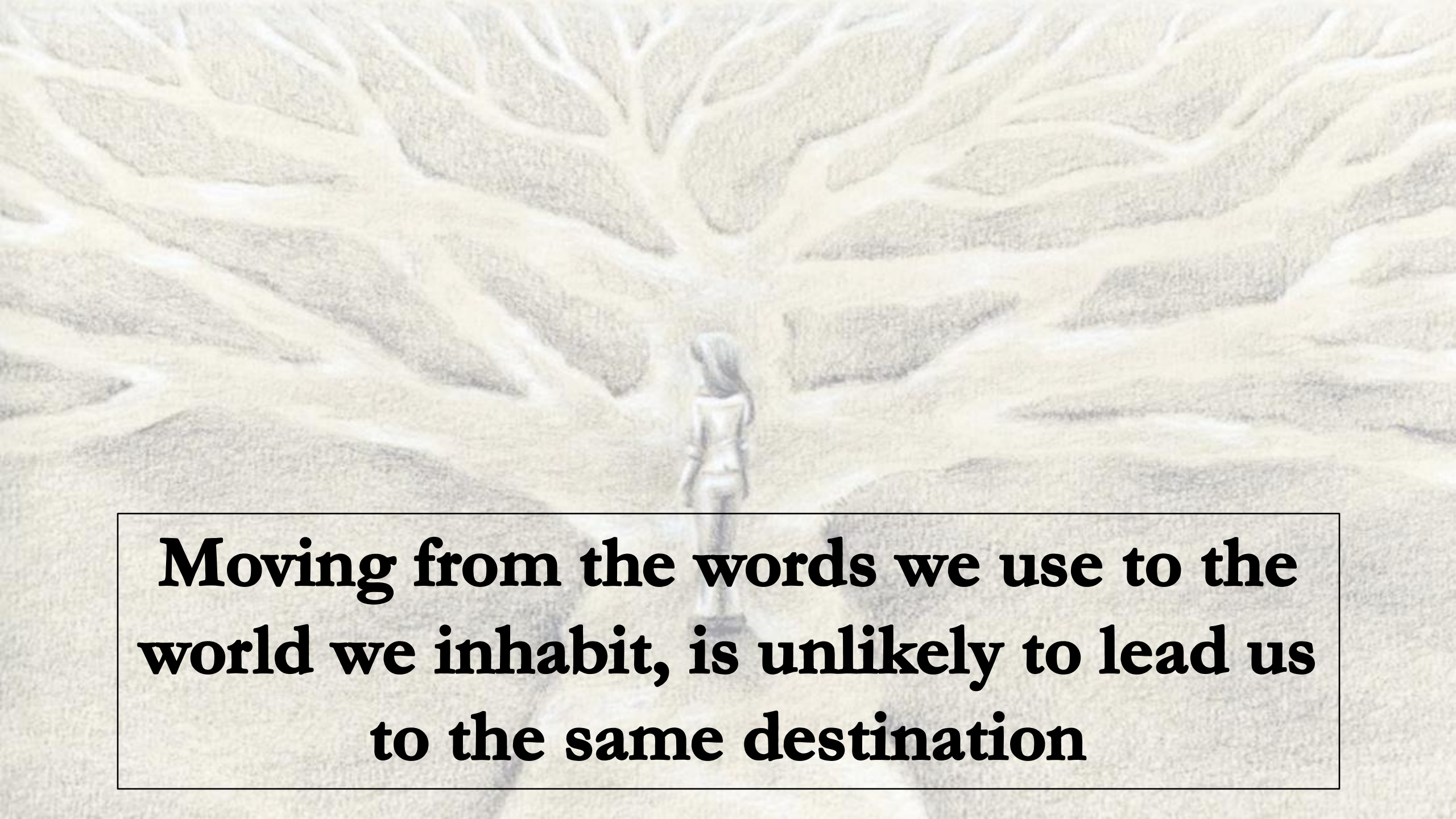
- Activity interoperability involves enforceable prescriptions

- Prediction requires:
  - Real-time information sharing and revising
  - Common operational perspective
  - Interoperability across activities



- Which will require:
  - New information support strategies
  - Semantic interoperability across data
  - New governance and training for both humans and machines

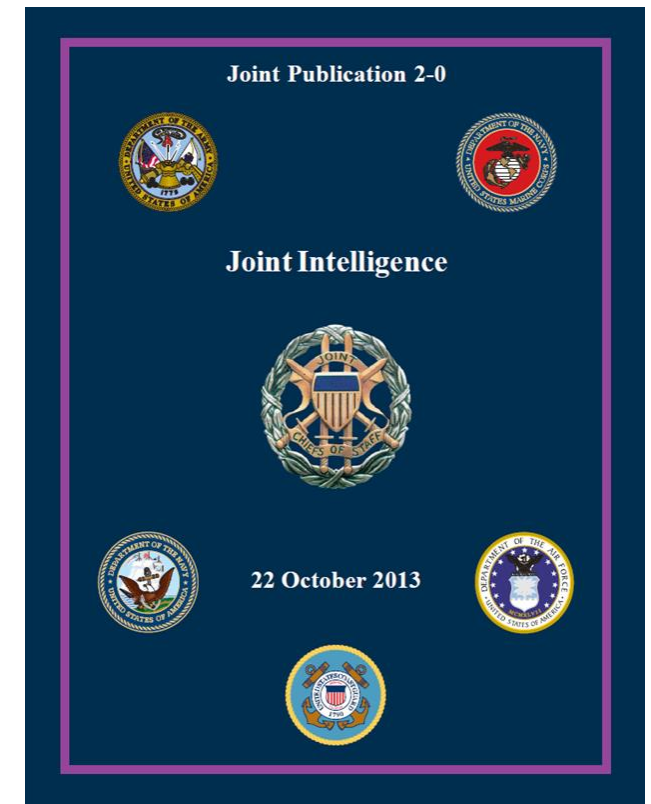


A person with long dark hair, seen from behind, stands in the center of a vast, undulating landscape of sand dunes. The dunes are covered in a dense, textured pattern of small, dark, branching structures, possibly seaweed or coral, creating a complex, maze-like appearance. The overall color palette is a mix of light beige and muted brown tones. The person is wearing a light-colored, sleeveless top and dark pants. The text is overlaid on the lower half of the image, enclosed in a thin black rectangular border.

**Moving from the words we use to the world we inhabit, is unlikely to lead us to the same destination**

# *Joint Publication 2.0 Definitions*

- *Intelligence* =<sub>def</sub> The product resulting from the collection, processing, integration, evaluation, analysis, and interpretation of available information concerning foreign nations, hostile or potentially hostile forces or elements, or areas of actual or potential operations, as well as the activities that result in the product and the organizations engaged in such activities.
- More explicit than the definition for intelligence I have provided



# *Preliminary Intelligence Definitions*

- *Intelligence gathering* =<sub>def</sub> Planned act aimed at acquiring information to promote the interests of an individual or collective, using methods deemed reliable by the individual or collective.

# *Preliminary Intelligence Definitions*

- *Intelligence gathering* =<sub>def</sub> **Planned act** aimed at acquiring information to promote the interests of an individual or collective, using methods deemed reliable by the individual or collective.

**An Act in which at least one Agent plays a causative role and which is prescribed by some Directive Information Content Entity held by at least one of the Agents.**

# *Preliminary Intelligence Definitions*

- *Intelligence gathering* =<sub>def</sub> Planned act **aimed at** acquiring information to promote the interests of an individual or collective, using methods deemed reliable by the individual or collective.

**Does not require the information in fact promotes relevant interests,  
but the Directive Information Content Entity must be so directed**

# *Preliminary Intelligence Definitions*

- *Intelligence gathering* =<sub>def</sub> Planned act aimed at acquiring **information** to promote the interests of an individual or collective, using methods deemed reliable by the individual or collective.

**Need not aim to acquire intelligence or evidence**



# *Preliminary Intelligence Definitions*

- *Intelligence gathering* =<sub>def</sub> Planned act aimed at acquiring information to **promote the interests** of an individual or collective, using methods deemed reliable by the individual or collective.

**But must be constrained by interests of relevant parties using  
reliable standards**



# *Preliminary Intelligence Definitions*

- *Intelligence gathering* =<sub>def</sub> Planned act aimed at acquiring information to promote the interests of an individual or collective, using methods deemed reliable by the individual or collective.

**Broad enough to cover both individuals and groups; could be specialized to reflect intelligence cycle planned acts**

# *Preliminary Intelligence Definitions*

- *Intelligence gathering* =<sub>def</sub> Planned act aimed at acquiring information to promote the interests of an individual or collective, using methods deemed reliable by the individual or collective.
- *Covert intelligence gathering* =<sub>def</sub> Intelligence gathering that aims to keep information gathering methods and results concealed from all but authorized individuals or collectives.

# *Preliminary Intelligence Definitions*

- *Intelligence gathering* =<sub>def</sub> Planned act aimed at acquiring information to promote the interests of an individual or collective, using methods deemed reliable by the individual or collective.
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**Caveat: Neither BFO nor CCO have adopted ICEs bearing roles;  
this is tentative**

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- *Intelligence gathering* =<sub>def</sub> Planned act aimed at acquiring information to promote the interests of an individual or collective, using methods deemed reliable by the individual or collective.
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- *Evidence* =<sub>def</sub> An information content entity that bears an evidence role.

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- *Intelligence gathering* =<sub>def</sub> Planned act aimed at acquiring information to promote the interests of an individual or collective, using methods deemed reliable by the individual or collective.
- *Evidence Role* =<sub>def</sub> A role borne by an information content entity when it justifies or undermines justification in one or more beliefs.
- *Intelligence* =<sub>def</sub> Evidence that is the output of intelligence gathering.

# *Group Exercise*

- Gather into groups and reflect on the definitions for intelligence and intelligence gathering provided
- Weight the costs and benefits of the suggested revision, leveraging counterexamples where possible to illustrate

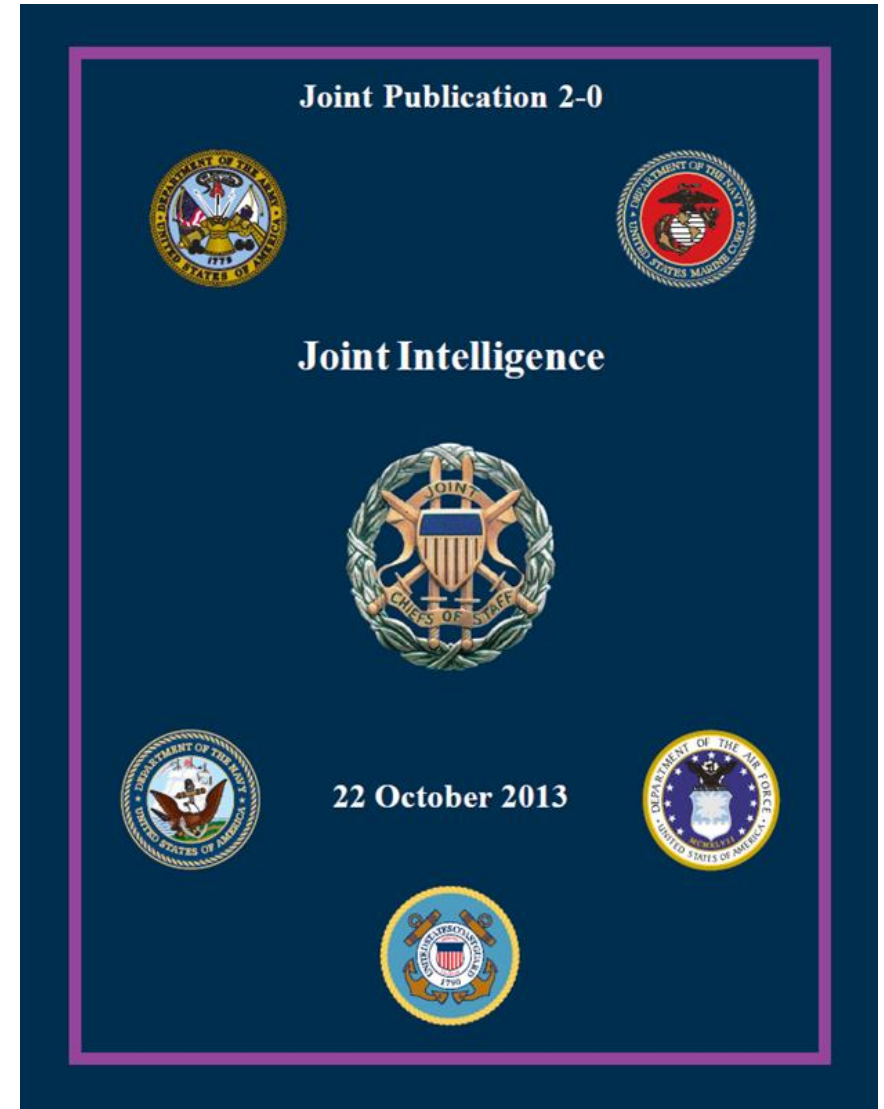
**Provide suggested improvements to the definitions**



# *Joint Publication Doctrine*

**not necessarily coherent**

- Provides authoritative body of ~~consistent~~ statements on:
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  - ...*for humans*...



# *Joint Publication Definition Guide*

- A definition should:
  - not be *over-restrictive*
  - not be *circular*
  - be *positive*
  - contain no *hidden definitions*

**operational area** =def. An overarching term encompassing more descriptive terms (such as area of responsibility and joint operations area) for geographic areas in which military operations are conducted.

**contingency operation** =def. A military operation that is either designated by the Secretary of Defense as a contingency operation or becomes a contingency operation as a matter of law (Title 10, United States Code, Section 101[a][13])

**subordinate command** =def. A command consisting of the commander and all those individuals, units, detachments, organizations, or installations that have been placed under the command by the authority establishing the subordinate command.

# *Group Exercise*

- Gather into groups and reflect on the definitions provided from the Joint Publication doctrine
- Evaluate whether these definitions respect the definition creation guidance introduced

**If so, explain why; if not, provide a counterexample**

# *Joint Publication Definition Guide*

- A definition should:
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	U	N	C	H
<b>operational area</b> =def. An overarching term encompassing more descriptive terms (such as area of responsibility and joint operations area) for geographic areas in which military operations are conducted.	X	X		X
<b>contingency operation</b> =def. A military operation that is either designated by the Secretary of Defense as a contingency operation or becomes a contingency operation as a matter of law (Title 10, United States Code, Section 101[a][13])			X	
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Table 1: Examples of errors in JP 1-02

U = **unclear**, N = **not concise**, C = **circular**, H = **hidden definitions**

# *Joint Publication Definition Guide*

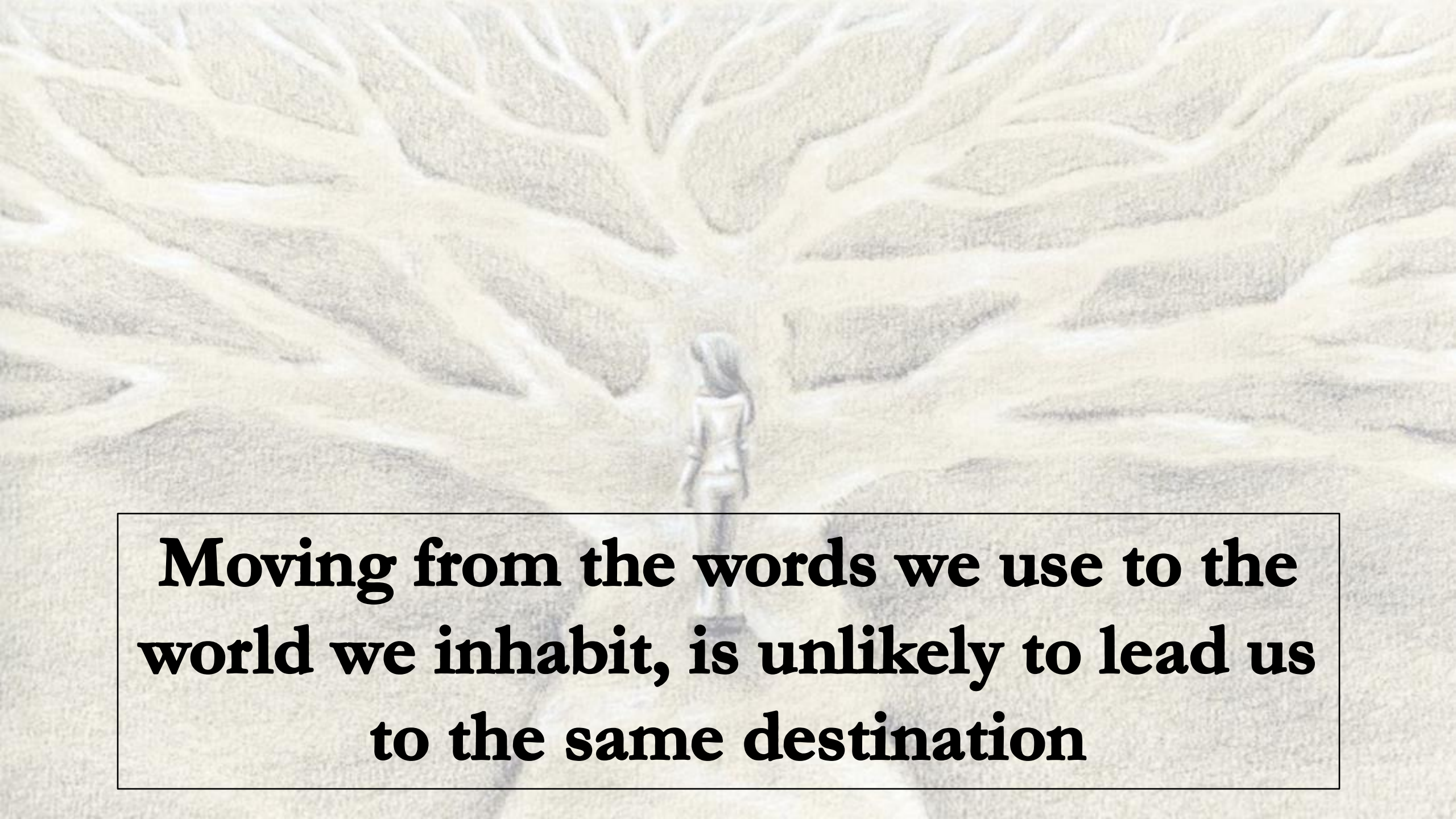
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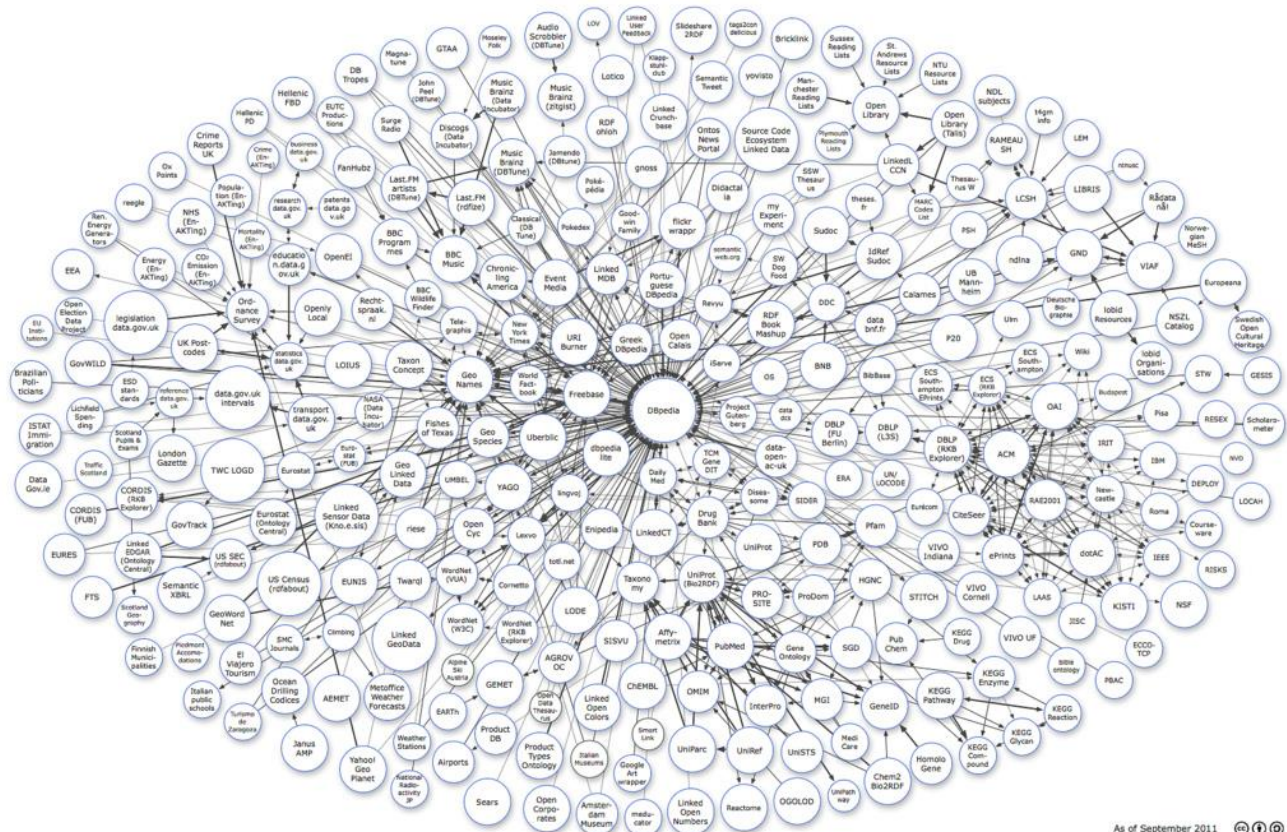


A person with long dark hair, seen from behind, stands in the center of a vast, undulating landscape. The terrain is covered in a dense, wavy pattern of light and dark brownish-yellow, resembling sand dunes or a textured surface. The person is wearing a light-colored, possibly white, outfit. The overall atmosphere is one of solitude and contemplation.

**Moving from the words we use to the world we inhabit, is unlikely to lead us to the same destination**

# Controlled Vocabularies

- Standards such as the Joint Doctrine Publications help humans use, understand, and create representations of reality
- And computers process representations of reality and connect data
- But they are **only able to** serve these purposes if developed in a coordinated, coherent, fashion





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