

An
**intelligence-engineering
framework** for
Defence Engagement
Considerations

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Introduction

- A substantially-structured **intelligence-engineering based framework for defence engagement** considerations in **human geography contexts** >>> readily advanced.
- That **step-by-step framework** covers aspects, e.g. **risk analysis** through (across + up) to **risk management**.
- This '**intelligence-engineering**' work = helpful for understanding **operational environments to strategic terrains** engaging in, both *a priori* +/- *post facto*.

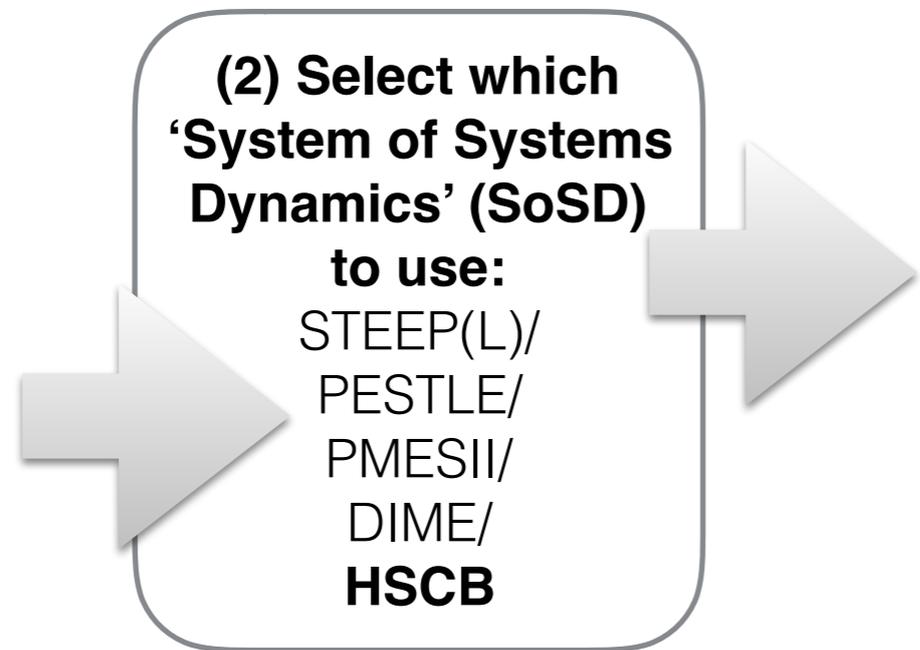
(1) Choose focus:

Theme(s)/
Issue(s)/
Problem(s)/
Hazard(s)/
Risk(s)/
Threat(s)



Step 1

- Step 1 concerns **‘targeting’ + ‘prioritisation’**
- Provides **multi-functional answer** to question - e.g.: **‘What to focus on?’** during intelligence enterprises/activities (missions, jobs, operations), however scaled + whether defence, security, humanitarian, etc.
- In this example, **‘human geography’** factors = selected.

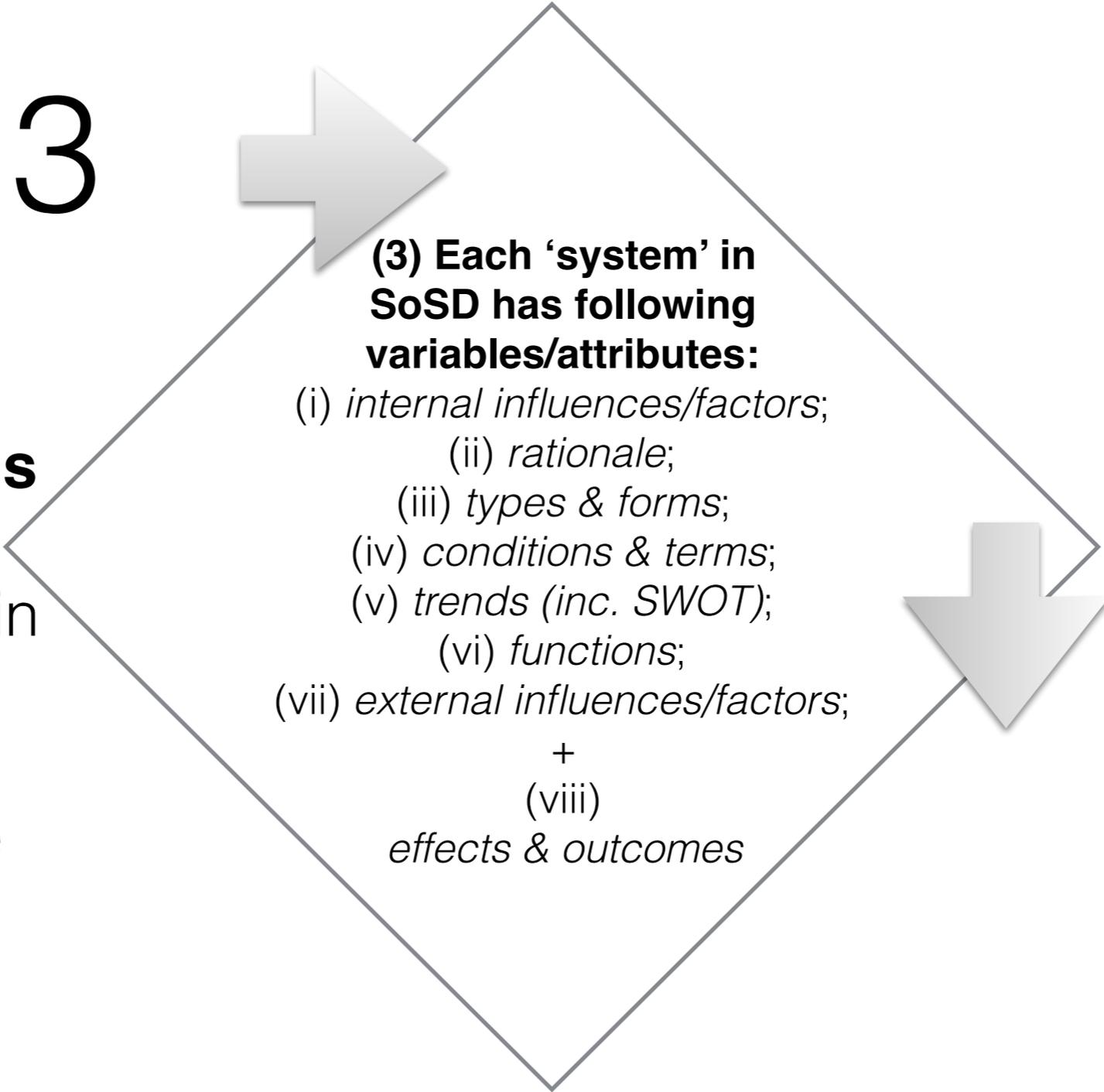


Step 2

- Provides guide as to: **‘What “units of analysis” or systems should be drawn upon?’**
- For example, **HSCB**: Human, Social, Cultural, Behavioural, etc.
- Above form the **units of analysis or systems** as **widely + conventionally used** by, e.g. US Military.

Step 3

- **Each of the units of analysis or systems** drawn on + ref. in prev. slide - e.g. social +/or cultural - can be **further broken-down** into their **different variables or attributes** during analysis.



(3) Each 'system' in SoSD has following variables/attributes:

- (i) *internal influences/factors;*
- (ii) *rationale;*
- (iii) *types & forms;*
- (iv) *conditions & terms;*
- (v) *trends (inc. SWOT);*
- (vi) *functions;*
- (vii) *external influences/factors;*
- +
(viii) *effects & outcomes*

How to put it all together? #1

Overall 'Situational Awareness' Evaluation (**SoSA/G-J2**)



CONTEXT APPRECIATION - Observe + Orient

System attributes/ variables > e.g. inc. captures + covers...? > ----- SoSA units (e.g. PMESII):	Internal influences / factors 'Who?' / 'Which?'	Rationale 'Why?'	Types + Forms 'What?'	Conditions + Terms 'When?'	Trends (+ dynamics/ flows) 'Where?'	Functions 'How?'	External influences / factors 'Who?' / 'Which?'	Effects + Outcomes 'What?' / 'S.W.O.T.'
Political (inc. law/legislation)								
Military								
Economic								
Social (inc. sociological + cultural)								
Informational/ Intelligence (inc. technological)								
Infrastructural (inc. environment[al])								

This matrix is designed to provide an analytic framework with **core - even checkbox - criteria or variables to consider** into which evaluators can record as holistically as possible - e.g., through mapping - what they observe from, e.g., a selected case/issue/problem, etc.

This approach enables the **comprehensive capturing of - if not all - at least several different aspects of an event/episode, issue, etc., in its varying key dimensions.**

FUSION EXAMPLE: ISIS

Overall 'Situational Awareness' Evaluation (**SoSA/G-J2**)

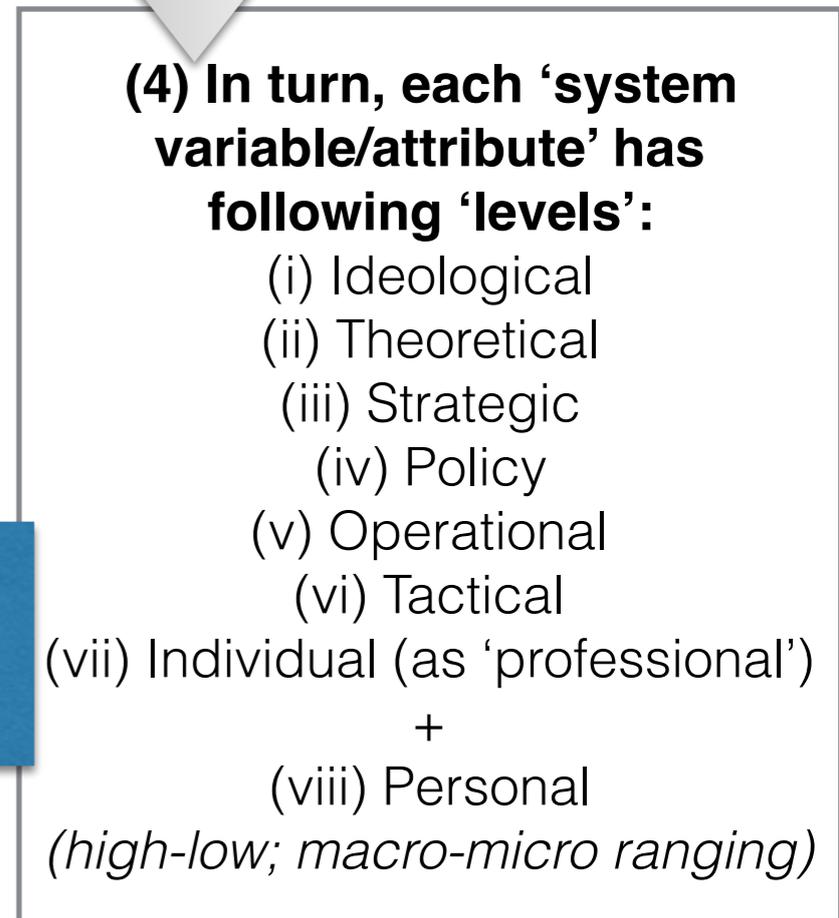
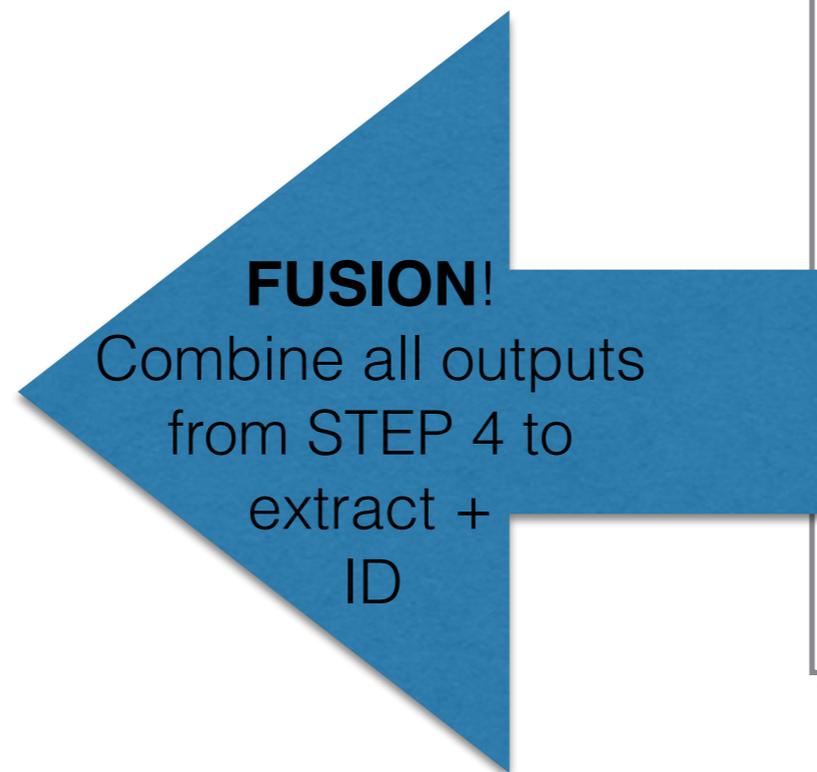


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Political (inc. law/legislation)	Sharia law / alternative hierarchies	Unrep. elsewhere/ power-play	Strong leadership	Fill governance vacuum	Exploiting Iraq/Syria weaknesses	Ruthless / kill off opposition	Sympathise rs	Imposing regime
Military	Tight, well- disciplined C2	Got weapons / tactics	e.g. Heavy +automatic weaponry	Succeed vs. weaker/ disorg. oppos	Good at capturing; less so at holding?	Agile / flexible / fast-lightfoot	Ex-military personnel	Competent committed adversary
Economic	Profitable/ employed	Make profit - e.g. oil	Steady supply funding	Exploit existing/new markets	Exploiting oil-refineries	Able to sell, e.g. oil	Resp to consumer demands	Self- sustaining/ autarky?
Social (inc. sociological + cultural)	Camarad- erie/ purpose	Romance	Bonding/ band-bros/ marriage	Links/ties - e.g. friends/ passions	Native + Foreign fighters	Quasi- religious/ smashing activities	'Call of the wild'/ share adventurism	Soft + not just hard factors
Informational/ Intelligence (inc. technological)	Good / soc media / BYOD	Able to influence	Social media/ propaganda	INFO/ PSYOPS = work	Use internet - e.g. Twitter	Access to electronic devices	Acquiescence support thru intimidation	Shifting frames of reference
Infrastructural (inc. environment[al])	Good networks/ comms	Can seize/ control/ trade/nego	Training camps/bases	Using what is there - e.g. roads...	Urban/settled/ travel-able areas	Travel on roads / oil refinery use	Unwitting(?) private service prov	Too depend on what have already?

Step 4

- **Every system variable or attribute** prev. ref. on STEP 3 slide - e.g. 'rationale' >>> **evaluated further.**
- They each have **8 different, informing 'levels' of experience**, which >>> also drawn on during analysis.



How to put it all together? #2

Overall 'Mission Accomplishment' Guide (**SoSE/G-J3**)

SOLUTION FASHIONING - Decide + Act

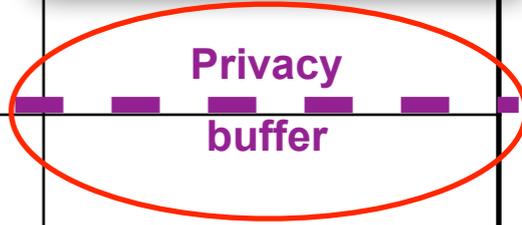


SoSA units (e.g. PMESII) > ----- 'Levels' (of interactivity/ implementation/ engineering):	Political (inc. law/legislation)	Military	Economic	Social (inc. sociological + cultural)	Informational/ Intelligence (inc. technological)	Infrastructural (inc. environment[al])
Ideological (e.g. Ideas/Why realise?)						
Theoretical (e.g. Aspirations/Why do?)						
Strategic (e.g. Directions/How go?)						
Policy (e.g. Aims/Where go?)						
Operational (e.g. How/What realise?)						
Tactical (e.g. How/What do?)						
Individual (as 'professional') (e.g. What/Which realise?)						
Personal (e.g. Who do?)						

Deliverable work filling/completing this matrix (+ the one given on prev. slide) can be done 'live' - e.g. in a real battlespace/operational context ('pre-flight' style); or equally can be done more 'off-line' + in the abstract - e.g. during a simulation/training/exercise in the classroom.

Overall, these matrices form useful analytical frameworks + educational teaching tools, also helping to advance standards + best practices in approaches towards situation evaluations + subsequent transformation.

Also suggests where 'to draw the line' in relation to issues, e.g. privacy, etc.



How to put it all together? #3

Fusion grid = mapping System Attributes/Variables + Levels

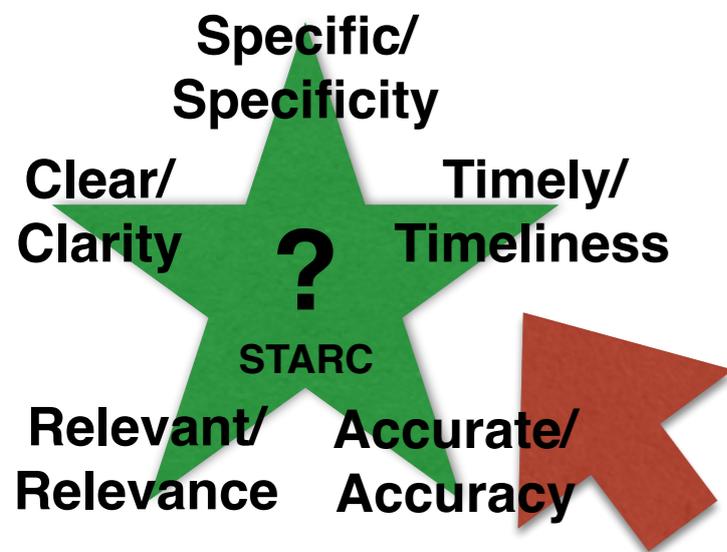
for each specified SoS unit of analysis* - e.g. using PMESII model: Political; Military; Economic; Social; Informational/Intelligence; Infrastructural (*show which is selected for focus)

System Attributes/ Variables> ----- 'Levels' (of interactivity/ implementation/ engineering):	Internal influences / factors 'Who?' / 'Which?'	Rationale 'Why?'	Types + Forms 'What?'	Conditions + Terms 'When?'	Trends (+ dynamics/ flows) 'Where?'	Functions 'How?'	External influences / factors 'Who?' / 'Which?'	Effects + Outcomes 'What?' / 'S.W.O.T.'
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This third chart (table) for mapping allows for 'triangulation' to be undertaken, e.g. with the results from the other two previous charts, during overall 'fusion' activities.

Privacy
buffer

Step 5

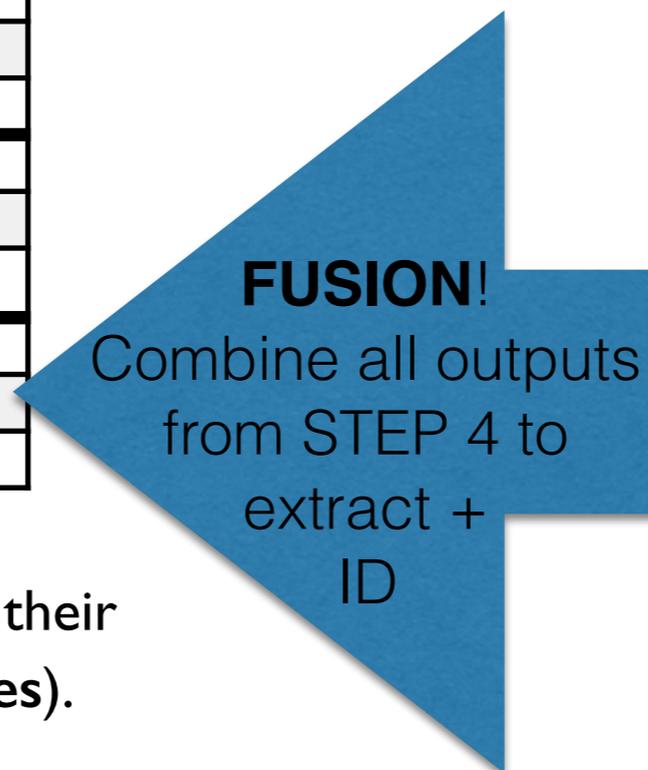


(5) Identify A+B+C = 'Signifier Node':

(A) 'Key Actors' - e.g. who? (e.g. OC groups, individuals, other 'targets', etc.)	(A1) Events - e.g. what? when?
	(A2) Patterns - e.g. how?
	(A3) Drivers - e.g. why?
(B) 'forces/factors of change' - e.g. what activity? (e.g. SOC areas, etc.)	(B1) Events - e.g. what? when?
	(B2) Patterns - e.g. how?
	(B3) Drivers - e.g. why?
(C) 'possible change over time' - e.g. when? / where? (e.g. environment, PESTLE/PMESII [SoSD] indicators, SWOT, etc.)	(C1) Events - e.g. what? when?
	(C2) Patterns - e.g. how?
	(C3) Drivers - e.g. why?

Aim = capture:

(i) the **players**; (ii) their **relationships**; (iii) their **drivers** (means, motives & opportunities).



- **All the different, multitude of factors** ref. in prev. steps = **brought together via fusion.**
- Provide **insights into A+B+C >>> generate 'Signifier Node(s)'** for 'what/where next?' **decision-making + subsequent responses.**
- Overall output **adheres to STARC** end-user/customer criteria.

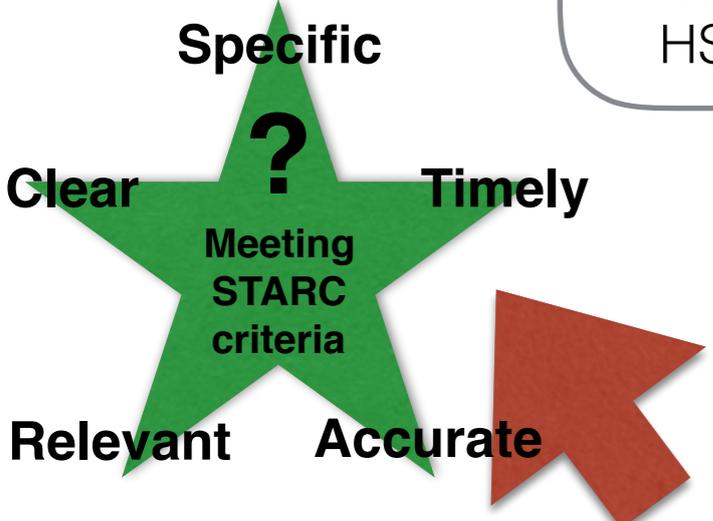
(1) Choose focus:
 Theme(s)/
 Issue(s)/
 Problem(s)/
 Hazard(s)/
 Risk(s)/
 Threat(s)

(2) Select which 'System of Systems Dynamics' (SoSD) to use:
 STEEP(L) [B.I.]/
 PESTLE [EUROPOL]/
 PMESII [NATO]/
 DIME [USMIL.]/
 HSCB [USMIL.]

(3) Each 'system' in SoSD has following variables/attributes:
 (i) *internal influences/factors;*
 (ii) *rationale;*
 (iii) *types & forms;*
 (iv) *conditions & terms;*
 (v) *trends (inc. SWOT);*
 (vi) *functions;*
 (vii) *external influences/factors;*
 +
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A comprehensive, structured analytical framework for helping address & better manage **UNCERTAINTY**

Each of factors included in STEPS 2-4 can be **listed/mapped via grids/matrices** for transparency, traceability & accountability

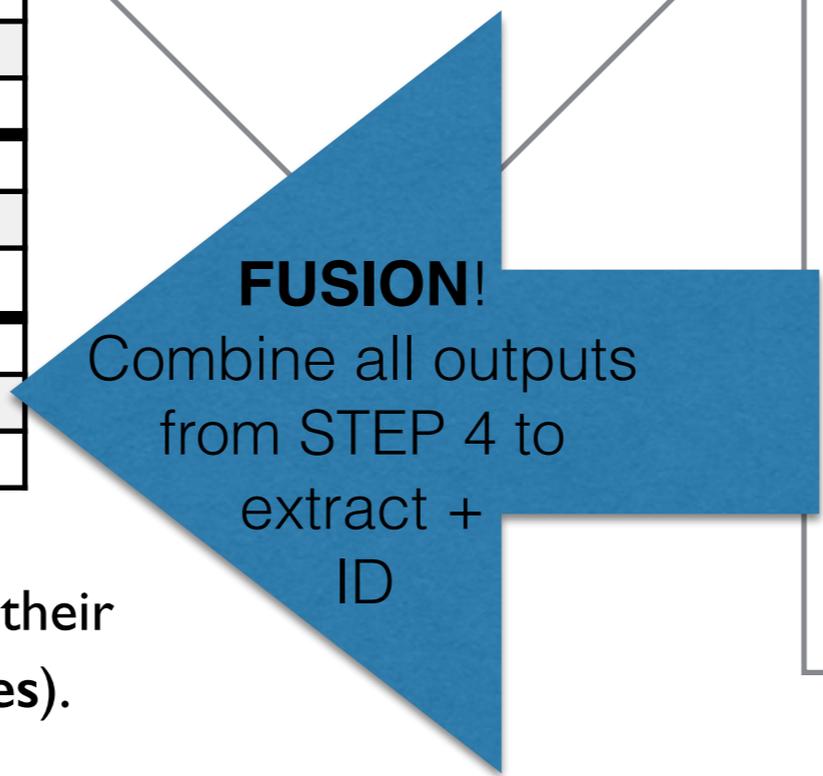


(5) Identify A+B+C = 'Signifier Node':

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	(A2) Patterns - e.g. how?
	(A3) Drivers - e.g. why?
(B) 'forces/factors of change' - e.g. what activity? (e.g. SOC areas, etc.)	(B1) Events - e.g. what? when?
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(C) 'possible change over time' - e.g. when? / where? (e.g. environment, PESTLE/PMESII [SoSD] indicators, SWOT, etc.)	(C1) Events - e.g. what? when?
	(C2) Patterns - e.g. how?
	(C3) Drivers - e.g. why?

Aim = capture:

(i) the **players**; (ii) their **relationships**; (iii) their **drivers** (means, motives & opportunities).



(4) In turn, each 'system variable/attribute' has following 'levels':
 (i) Ideological
 (ii) Theoretical
 (iii) Strategic
 (iv) Policy
 (v) Operational
 (vi) Tactical
 (vii) Individual (as 'professional')
 +
 (viii) Personal
(high-low; macro-micro ranging)

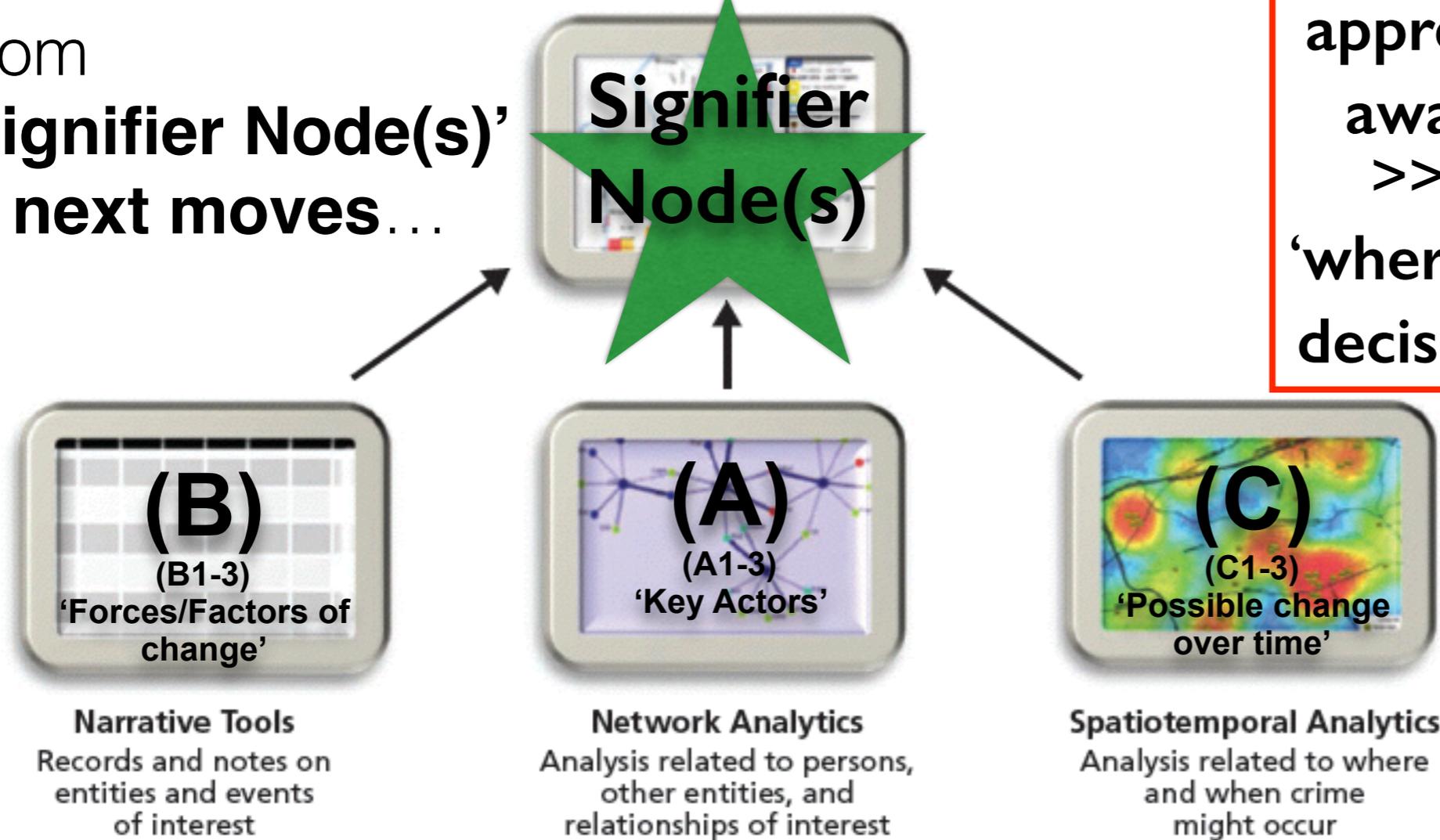
How to next go forward?

130 Predictive Policing: The Role of Crime Forecasting in Law Enforcement Operations

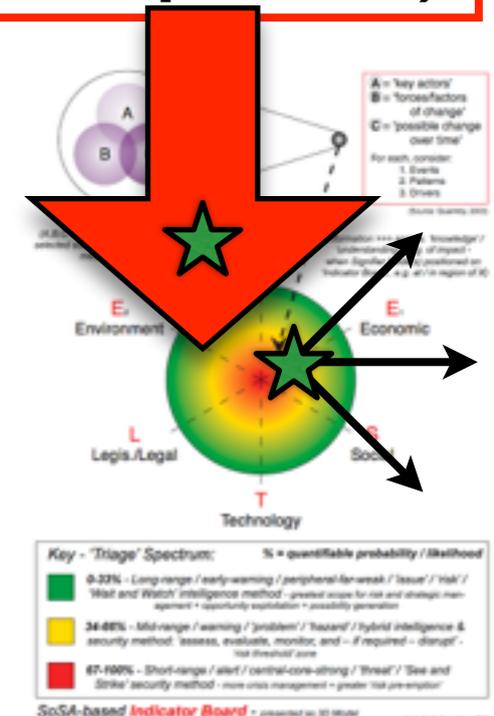
Figure 5.5
Tools to Create Shared Situational Awareness

From
'Signifier Node(s)'
to **next moves...**

Common Operational Picture
Near-term key information and decision support



Generation of **'Signifier Node(s)'** for positioning on triage-related/colour-coded **'indicator board(s)'** = for context appreciation + situation awareness generation >>> help for making **'where next?'** + response decisions (SEW potent.)



Conclusions #1

- A substantially-structured **intelligence engineering-based framework for defence engagement in human geography contexts** = demonstrated, inc. how >>> best advanced.
- Framework covers **risk analysis** through (across and up) to **risk management** considerations, both **now + in/for the future**.
- Remaining **highly complex**, many concerns = **in-play**.
- But, overall strategic-ranging 'ends' >>> approached effectively in a '**bite-sized**', '**step-by-step**' **building** ways + means manner.

Conclusions #2

- Framework **covers all multiple dimensions** summarised by + in this RAND report *figure* (below):

Figure 3.2
Geospatially Oriented Aspects of the Information Domain of the Operating Environment

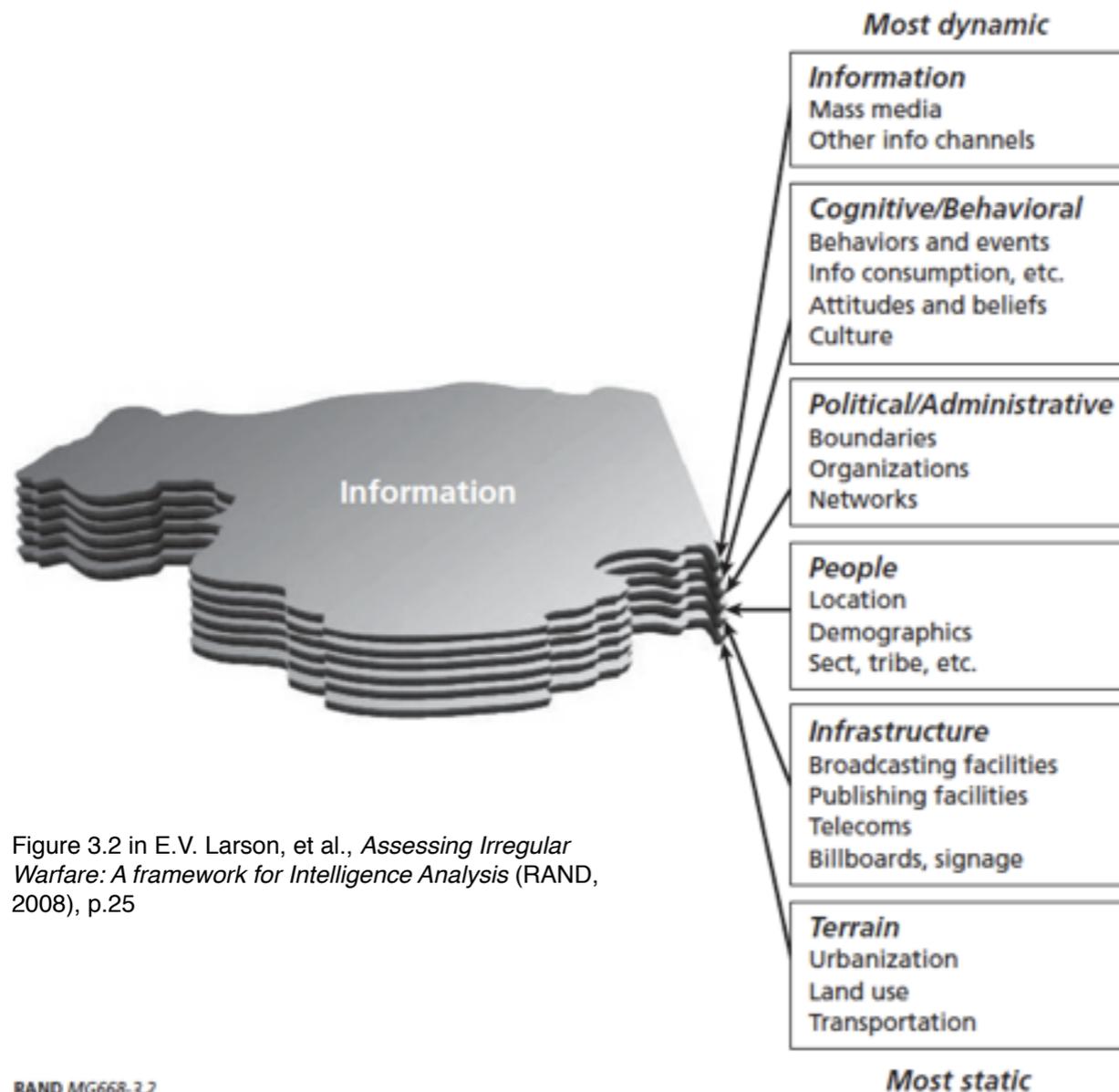


Figure 3.2 in E.V. Larson, et al., *Assessing Irregular Warfare: A framework for Intelligence Analysis* (RAND, 2008), p.25

- Captures ‘**M4IS2: multiagency, multinational, multidisciplinary, multidomain information sharing and sense making**’, which >>> ranges across ‘**eight entities [of] commerce, academic, government, civil society, media, law enforcement, military and non-government/non-profit.**’ (Segell, 2012)

Context appreciation

@intstrategist

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