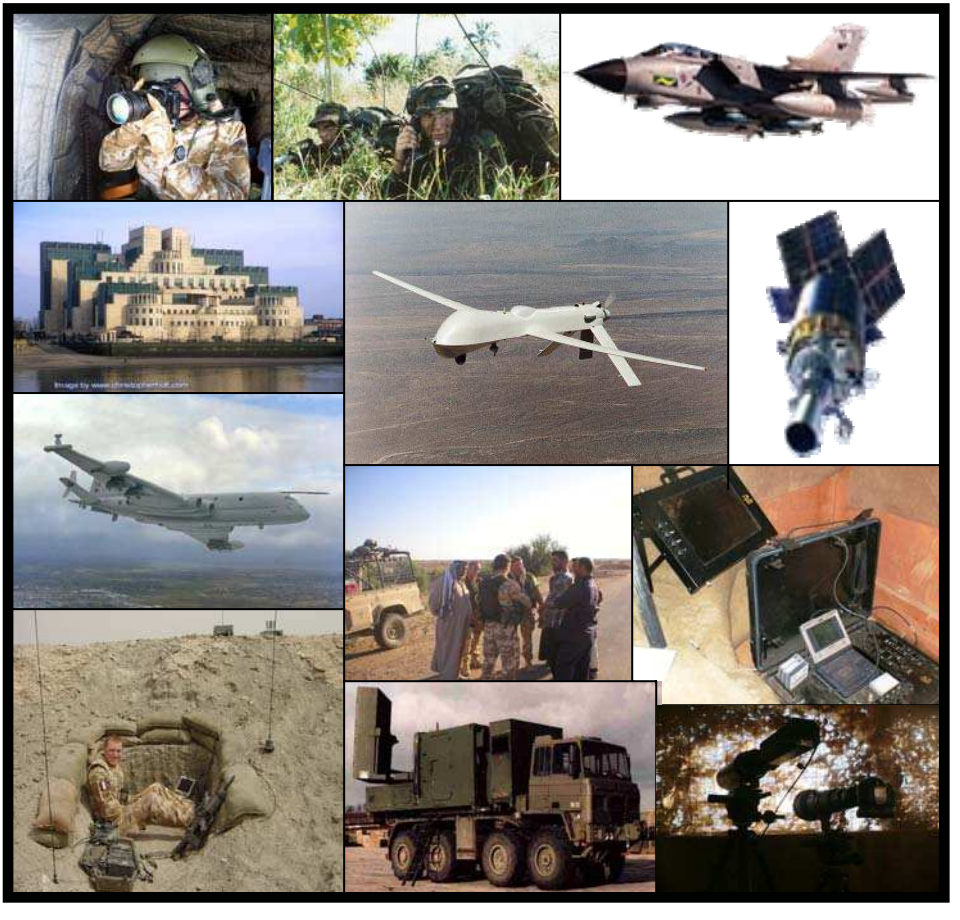
AC 71869

Field Army ISTAR Handbook



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PREFACE

"All the business of war, and indeed the business of life, is to endeavour to find out what you don't know by what you do; that's what I called 'guessing what was on the other side of the hill' ".

The Duke of Wellington

FOREWORD

ISTAR is a rapidly evolving area and this aide memoire is designed to provide a 'ready reckoner' for all levels of command across the Field Army. Advances in all aspects of ISTAR, especially in equipment and process terms, over the past 18 months have been far reaching. There is a danger of collection capability outstripping our ability to deal with the increased amounts of intelligence and information unless we collectively improve our understanding of these collection assets and how best to employ them in order to achieve the desired effect. ISTAR is not a 'black art' and is everyone's business – a pair of eyes is an ISTAR asset. But there is much available and a general understanding of the employment, tasking and capabilities of ISTAR is essential down to the lowest levels. Hence this aide memoire of current practices and equipments has been produced. It has utility for formation staffs down to section commanders all of whom will have recourse to either task or have access to the platform or its products.

Chief ISTAR LAND 8th June 2007

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SECTION 1 - WHAT IS ISTAR?

ISTAR is:

1. "The coordinated acquisition, processing and dissemination of timely, accurate, relevant and assured information and intelligence which supports the planning and conduct of operations, targeting and the integration of effects and enables commanders to achieve their goals throughout the spectrum of conflict."

2. Or put simply:

ISTAR provides information and intelligence to support the commander and his decision making process.

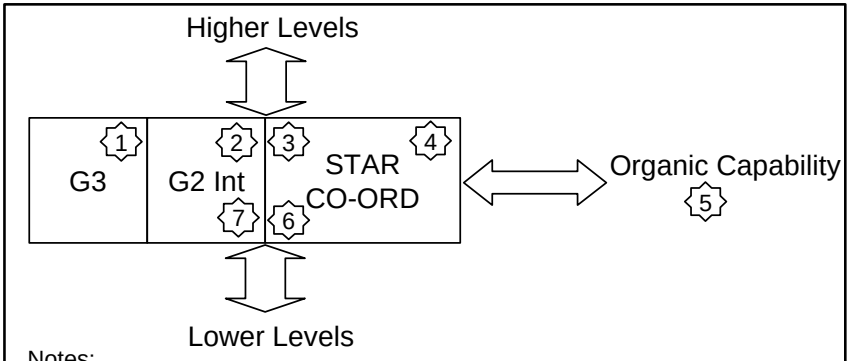
3. It is critical that commanders at all levels understand the type and quantity of ISTAR products available to them in any operation. They must also understand how they can use these to support their decision making process, and how they can be used to provide immediate battlefield support to troops in contact. This handbook is designed to act as a quick reference guide for commanders within land formations, and aims to explain briefly:

- How ISTAR works within formations,
- Who is responsible for conducting ISTAR
- What products are available to commanders at all levels and how to bid for them
- The capabilities of ISTAR collection assets

ISTAR Command and Control

4. UK doctrine states that operations should be intelligence led, and ISTAR C2 (illustrated at Fig 01 below) recognises that intelligence drives the STAR collection effort and that this in turn feeds the intelligence analysis process. The ISTAR process builds upon the fundamental elements of the Intelligence Cycle[1] with practices and procedures designed to harness the capability of collection assets.

Generic ISTAR C2 Model



Notes:
1. Commander/G3 Direction
2. Information Requirements Management.
3. ISTAR Op O/Annex.
4 Collection Coordination & Management
5. Collection.
6. Single Source Collation/Analysis/Dissemination.
7. All Source Analysis/Dissemination.

Fig. 01

[1] Direction, Collection, Processing and Dissemination.

ISTAR Process

5. The Intelligence Estimate and Intelligence Preparation of the Battlespace (IPB) process[2] establish the baseline understanding of any situation, from which all subsequent ISTAR activity is initiated. Thereafter the ISTAR process is an iterative cycle that continually revises and refines this initial assessment in order to enable the best decision.

6. **The Intelligence Cycle.** Despite significant changes in the capability of ISTAR resources, the Principles of Intelligence[3] and Intelligence Cycle are enduring. This is why:

a. **Direction[4].** G2/ISTAR staffs do not direct themselves, they need to be given unambiguous instructions, including clear guidance on where to concentrate their effort, through such means as Priority Intelligence Requirements (PIR). Full understanding of IRs allows the G2/ISTAR community to coordinate and prioritise collection, exploitation, processing and dissemination activities.

b. **Collection[5].** This aims for the systematic exploitation of available ISTAR resources to detect, recognise, identify and locate all objects of military interest;

[2] Battlespace Area Evaluation, Threat Evaluation and Threat Integration.
[3] Centralised coordination, timeliness, systematic exploitation, objectivity, accessibility, responsiveness, source protection and continuous review.
[4] The determination of intelligence requirements, planning the collection effort, the issuing of orders and requests to collection agencies and maintenance of a continuous check on the productivity of such agencies.
[5] The exploitation of sources by collection agencies and the delivery of the information obtained to the appropriate processing unit for use in the production of intelligence (AAP-6).

effectively the coordination of collection assets. Note that there is a distinction between Intelligence Requirements Management (IRM) and Collection Coordination (CC). The former is very much an intelligence matter, and the latter an operations speciality.

c. **Processing**[6]**.** This is the key stage in analysis and assessment of information, allowing the incorporation of new information into old intelligence to provide a product that is greater than the sum of its parts. The aim should be for processing to be as responsive to the situation as the collection fleet, recognising the relative importance of one piece of information or intelligence over another, so that decision makers can be informed in the right timeframe.

d. **Dissemination**[7]**.** The dissemination regime will depend on the Information and Communications Technology (ICT) provided, but customers and intelligence staff must work together to ensure that intelligence reaches the right audience. Increasingly, headquarters are making use of databases, incorporating geospatial representations of data into a Recognised Land Picture (RLP), as part of a Joint Operational Picture (JOP), for Shared Situational Awareness (SSA).

[6] The production of intelligence through collation, evaluation, analysis, integration and interpretation of information and/or other intelligence (AAP-6).
[7] The timely conveyance of intelligence, in an appropriate form and by any suitable means, to those who need it (AAP-6).

G2/ISTAR Interfaces

7. If ISTAR is to benefit the customers for whom it is working, it needs to have regular interfaces with them. These interface opportunities are illustrated below. The most significant interface and exchange of information is that between the G2/ISTAR Group and the Commander (and his staff); clear direction and guidance are fundamental in ensuring the usefulness of the Applied Intelligence[8].

G2/ISTAR Working Interfaces

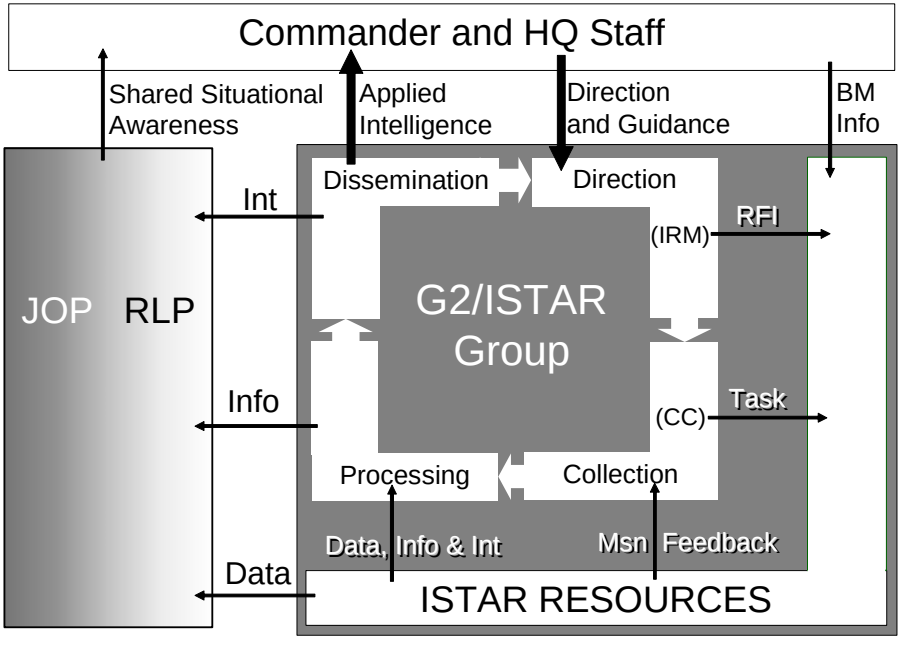


Fig. 02

[8] The product resulting form the processing of information concerning foreign nations, hostile or potentially hostile elements or area of actual or potential operations (AAP-6) .

ISTAR Functions

8. ISTAR assets can supply applied intelligence through their application of a number of key functions. These are:

9. **Information Requirements Management.** IRM is a pivotal function that facilitates responses to IRs through coordination and prioritisation of collection, exploitation of raw data, processing, and dissemination activities. It allows IRM staff to identify the need for either an RFI or a collection task. The IRM staff are therefore key to the direction process.

10. **Collection Coordination.** This involves selecting the most appropriate means to satisfy IRs, order and optimise collection activities amongst ISTAR resources, whilst de-conflicting/synchronising with collection activities of higher headquarters and flanks. The CC requires knowledge and experience of ISTAR capabilities and processes, as well as an appreciation of Battlespace Management (BM) issues. The Collection Coordination Cell will need to work closely with IRM, the All Source Assessment Cell (ASAC) and representatives from indigenous and supporting ISTAR assets.

11. **Data Exploitation.** Many ISTAR platforms are able to conduct ‘first phase’ data exploitation in order to generate first phase intelligence reporting that can be easily understood by an all source analyst. This element may be either inside or outside the Army HQ, or even within the ASAC, depending on its nature and size. Exploitation elements and ISTAR assets may also be grouped for practical reasons (such as shared communications infrastructure.)

12. **All Source Analysis.** All source analysis should be just that; involving material from Unclassified open sources to Top Secret STRAP compartments, in order to derive objective and

predictive applied intelligence. Operationally, an affiliated MI CS Sect may be augmented with an Operational Intelligence Support Group (OISG) to enable Tactical Exploitation of National Capability (TENCAP). Thus military and civilian capability should form one integrated analysis team, fusing organic, joint and national resources.

13. **Dissemination.** Getting information at the right classification, to the right person, by the right time is a key responsibility of ISTAR staff, and prevents wasted effort by collection and assessment staff. In practice this should become a subset of the IRM function.

14. **Support to Targeting.** The G2/ISTAR Group can assist G3/G5 by identifying collection opportunities andpotential targets. An integrated responsibility of the ASAC, this may take a number of forms;

a. Identification of either High Value/High Pay-off Targets (HVT/HPT) and Joint Time Sensitive Targets (TST) and collection opportunities against them by ISTAR asests.

b. Development of targeting material to support Collateral Damage Estimation (CDE) and the designation of a Desired Point of Impact (DPI).

c. Assist with the selection of appropriate Measures of Effect (MOE) and manage the information requirements for Combat and Bomb Damage Assessment (CA/BDA.) This and some of the above skills may require specialists, or specialist assistance from the targeting cell.)

SECTION 2 - WHO 'DOES' ISTAR?

15. The UK Intelligence Community is wide and diverse and its customer requirements reflect a broad range of threats. By comparison the number of collection assets is limited and competition for them is high. As a result, National Intelligence Structures are not always able to support intelligence requirements in theatre to the degree that deployed forces would like.

16. In operational theatres, most (though not all) of the intelligence collection assets are military capabilities designed to provide products for deployed forces. Competition for them is still high and some are allocated at the highest level (US Combatant Commands). It is important to realise that a battlegroup in theatre may be the brigade or divisional main effort but still be a low priority for UK joint or coalition assets within the theatre.

17. A basic illustration of the National Intelligence Architecture is at Fig 03. Intelligence support to operational theatres is provided both through military channels (PJHQ J2) and other government departments (OGDs). Representatives of OGDs can be located in theatre in the Operational Intelligence Support Group (OISG) which serves as a fusion cell for national agencies, and a conduit for operational theatres to access their products. UK policy on intelligence support to operations is determined in the Defence Intelligence Staff (DIS) and coordinated by the weekly meeting of the Joint Intelligence Coordination Board (JICB).

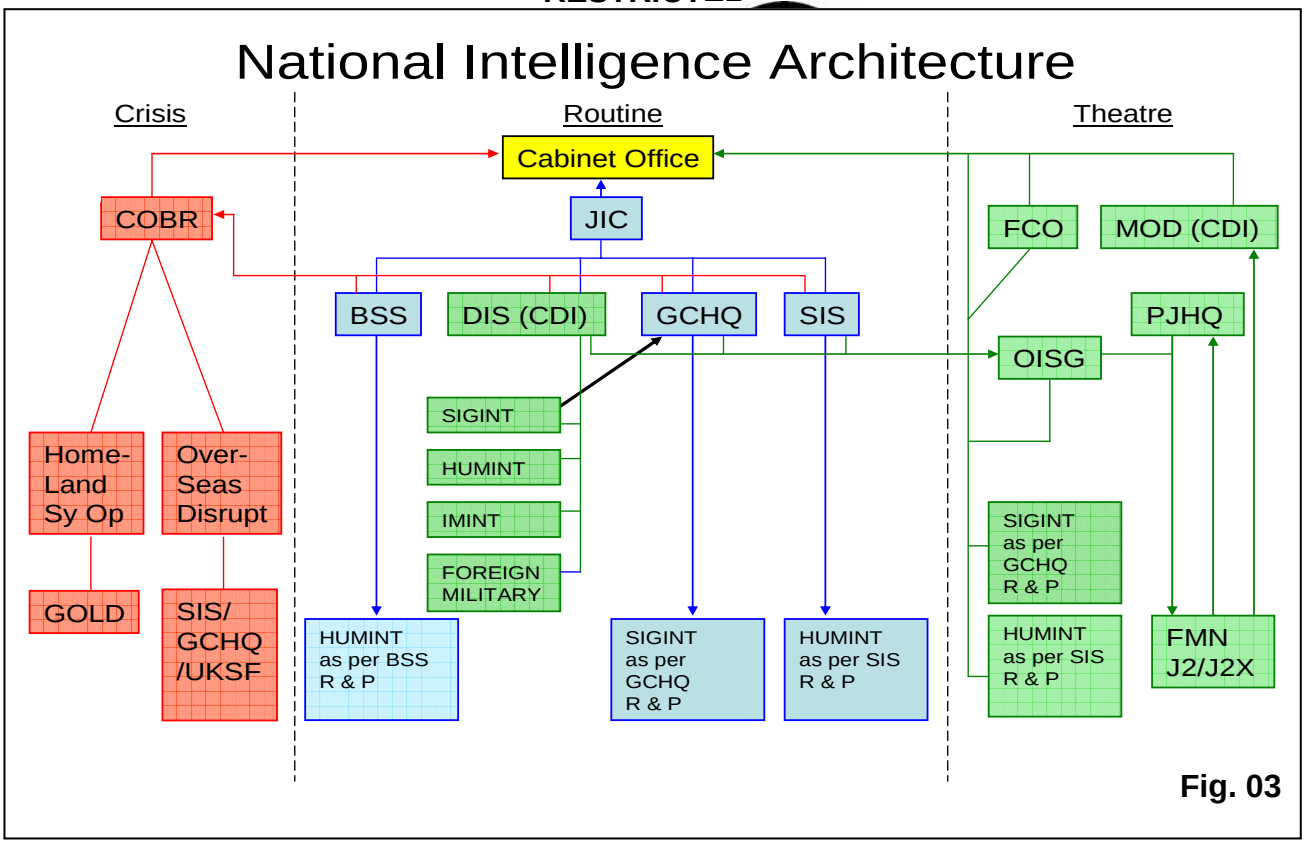

National Intelligence Architecture
Crisis
Routine
Theatre
Cabinet Office
COBR
JIC
FCO
MOD (CDI)
BSS
DIS (CDI)
GCHQ
SIS
PJHQ
OISG
SIGINT
HUMINT
IMINT
FOREIGN MILITARY
Home-Land Sy Op
Over-Seas Disrupt
GOLD
SIS/ GCHQ /UKSF
HUMINT as per BSS R & P
SIGINT as per GCHQ R & P
HUMINT as per SIS R & P
SIGINT as per GCHQ R & P
HUMINT as per SIS R & P
FMN J2/J2X

Fig. 03

ISTAR AT THE OPERATIONAL LEVEL

18. Most of the intelligence products requested by deployed troops are collected and assessed by assets in or near the theatres themselves. Established ISTAR structures already exist to service those requests. Fig 04 below is a brief illustration of the appointments responsible for ISTAR at different levels of command. (See Section 3 for theatre variations)

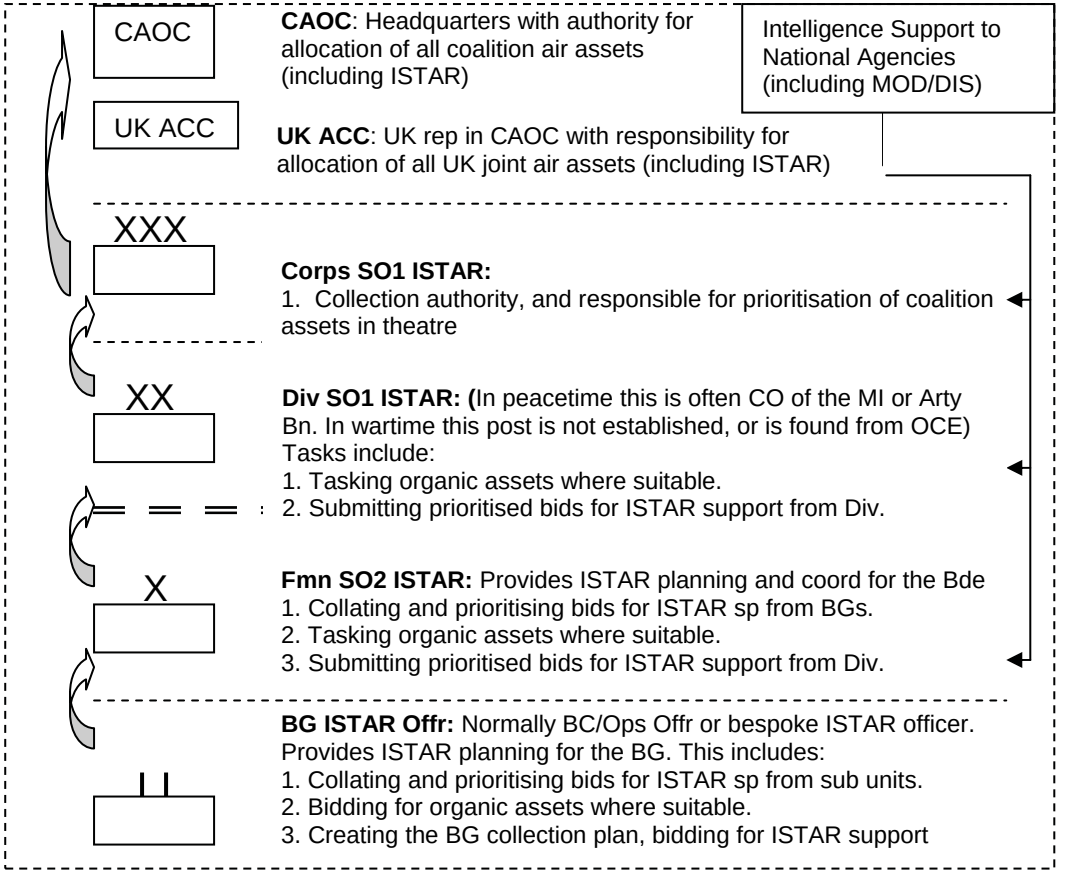


Fig. 04

ISTAR STRUCTURES

G2/ISTAR AT FORMATION LEVEL

19. The generic G2/ISTAR Group structure illustrated at Figure 05 below reflects the current trend on operations.

Generic G2/ISTAR Group Structure

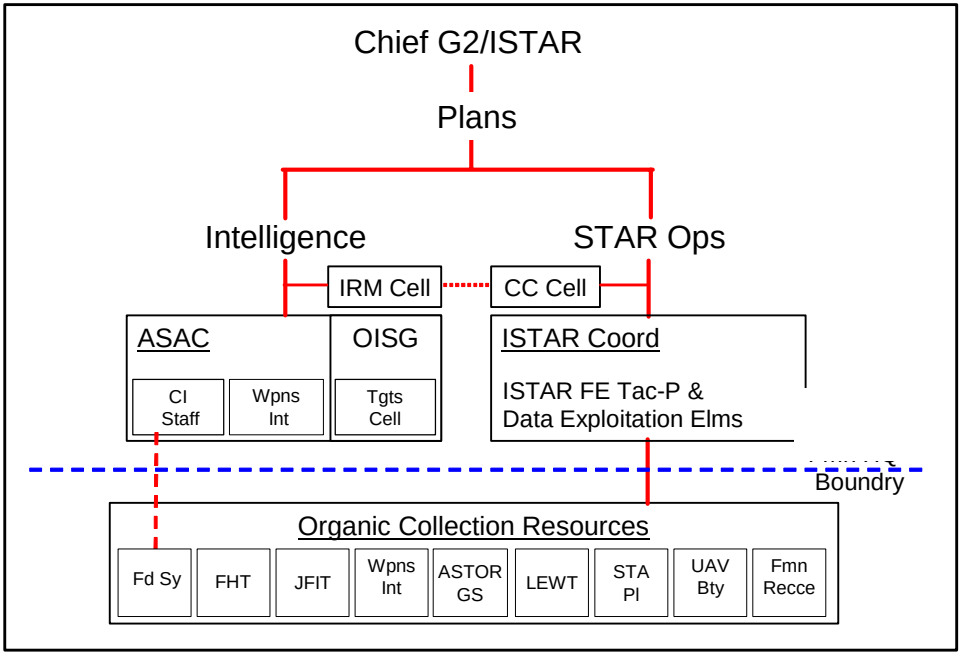


Fig. 05

NB. Weapons Intelligence (Wpns Int) capability is being migrated from Northern Ireland into the Field Army and is deployed on both HERRICK and TELIC. This capability will come with deployable teams and a staff element. The staff element will be an adjunct to the ASAC.

MANAGEMENT OF ISTAR

20. The job of managing ISTAR is a specialist role. Poor ISTAR management will deny the commander the timely and accurate information he needs to achieve his effect. As seen in Fig. 05, at most levels ISTAR is managed by a Chief ISTAR, who directs the mutually supporting activities of collection and assessment. The principal responsibilities of the Chief ISTAR, when leading the G2/ISTAR Group, are numerous, but the main ones include:

21. **Direction and Guidance.** This ultimately rests with Chief G2/ISTAR, who will need to manage the process, resources and consequently the information and intelligence to satisfy the PIR of the commander and his staff, including interaction with the targeting cycle. This should include advice to the commander and his other key staff on what can be achieved with the resources available.

22. **Understand the Commander's Needs.** Develop intimate knowledge of the commander's intent and the requirements for information and intelligence in order to achieve decisive effect. The IRM Cell will support this effort by maintaining accurate records of IRs and ensuring priorities are acknowledged across the G2/ISTAR Group.

23. **Prioritise Intelligence Production.** Chief ISTAR should ensure that the ISTAR Group concentrates on satisfying the highest priority IRs, directing the work of the ASAC and supporting FE. The ISTAR manager must also check that IRs are answered in the time frame required and products disseminated to the satisfaction of the customer.

COLLECTION MANAGEMENT

24. Collection and assessment are independent but mutually supporting functions. This document will not cover the specific skills of the assessment cell which is largely an intelligence discipline. Below, however, are the key points to consider for collection management, which is an operations speciality.

25. **Manage Collection Requirements.** There will inevitably be competing collection requirements. These can include the commander's standing intelligence requirements, IRs for current and future operations, and targeting support. The STAR Coord Cell must manage the collection plan so that these are answered in priority order, but without missing an opportunity to collect where an opportunity arises.

26. **Manage Collection Operations.** This may involve dynamic re-tasking of both organic and non-organic assets. The collection manager will select the most appropriate means to satisfy IRs, order and optimise collection activities, as well as synchronise with collection activities of neighbouring formations and higher headquarters, including joint and national ISTAR resources. For this the Collection Cell will need to work closely with G3 over BM issues. All ISR bids from units/sub-units for which he/she is responsible will pass through the collection manager and it is important to note that all bids for non-organic assets stand a far better chance of being accepted if they are accurate, concise and realistic.

27. **Understand Capabilities.** The collection manager must have an understanding of Land Organic, Joint and Coalition collection platform capabilities so they can be given realistic missions. Bids from formation level troops will normally request a capability (Full Motion Video, EO, Medium Altitude SIGINT) rather than a platform, as the ISR-D in the CAOC will assign tasks to mission managers. Understanding the platforms will help inform the dissemination channels and releasability constraints of the products. This will also assist in educating the commander, and managing the expectations of those who are unaware of ISTAR capability.

28. **Understand Dissemination.** Collection managers must understand the capabilities of the customer. Key questions include:

a. How will the combat troops receive and/or control the allocated resources and assets? (FAC/JTAC)

b. Do they have the necessary RVT to view the products?

c. If receiving the products via the ICT infrastructure do they have the correct ICT connectivity at the correct classification (eg NATO SECRET WAN/SIPR and MiRC? TACSAT?)

d. What are the bandwidth constraints for imagery?

e. How long does it take to deliver the product.? (eg Global Hawk = 10 mins to receive image but French Mirage F1CR = up to 4 days turnaround)

29. **Understand Limitations.** Collection managers at the highest levels will always attempt to optimise and maximise use of an asset. As a result a unit or formation RFI (even one supporting a main effort) might only be a secondary or tertiary mission by a collection platform. For example, a platform might only service an RFI on the ingress/egress over a target en route to its primary mission. Or it may not have the endurance to meet the full period of a request. ISTAR mangers should always establish the critical windows/period for an RFI to avoid a wasted mission. They must also manage the expectations of their customers.

SECTION 3 - HOW DOES ISTAR WORK?

The ISTAR question

30. The job of any ISTAR planner is to ensure that all IRs are met as quickly and accurately as possible.Many assets now exist to answer IRs, but they are not inexhaustible and demand for them is high. Before submitting requests for assets an ISTAR planner must apply a very basic test, illustrated below.

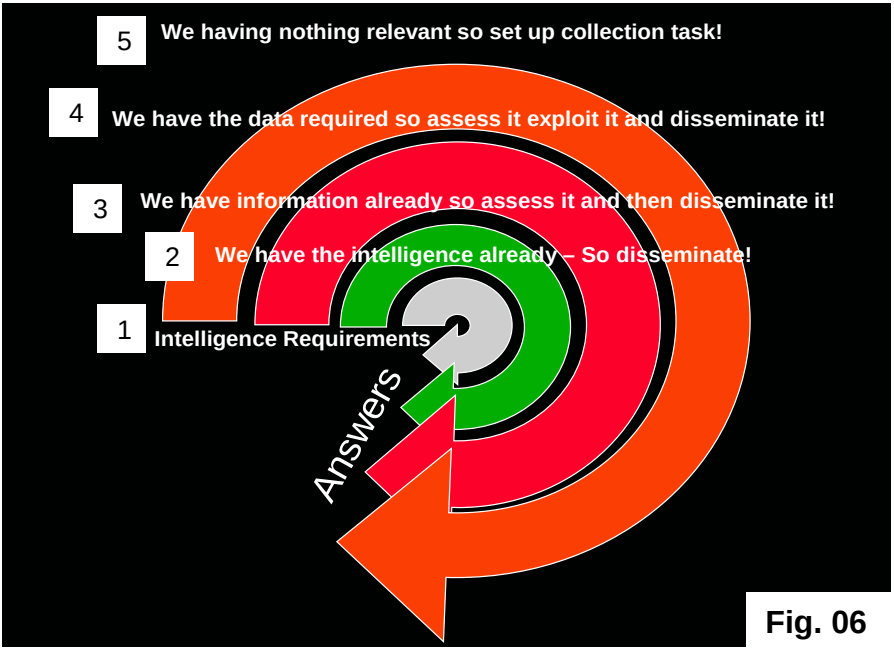


Fig. 06

31. In essence, additional support should only be sought if the IR cannot be met from within organic resources.

Basic Collection Planning

32. When planning for any operation, the ISTAR planner has a pivotal role in the planning process. He must be involved in planning from the inception of the ConOps and must work closely with J3 Ops staff throughout. Too often J3 Ops and ISTAR planners wait for a cue from each other. The following sections explain the role of the ISTAR officer in the Planning Process in simple terms (Fig 07 below) and his/her detailed contribution to the Combat Estimate (Fig 08). Note that when units wish to bid for theatre ISTAR assets to support deliberate operations, they must include a 96 hr lead time to allow for the theatre CCIRM process to work effectively:

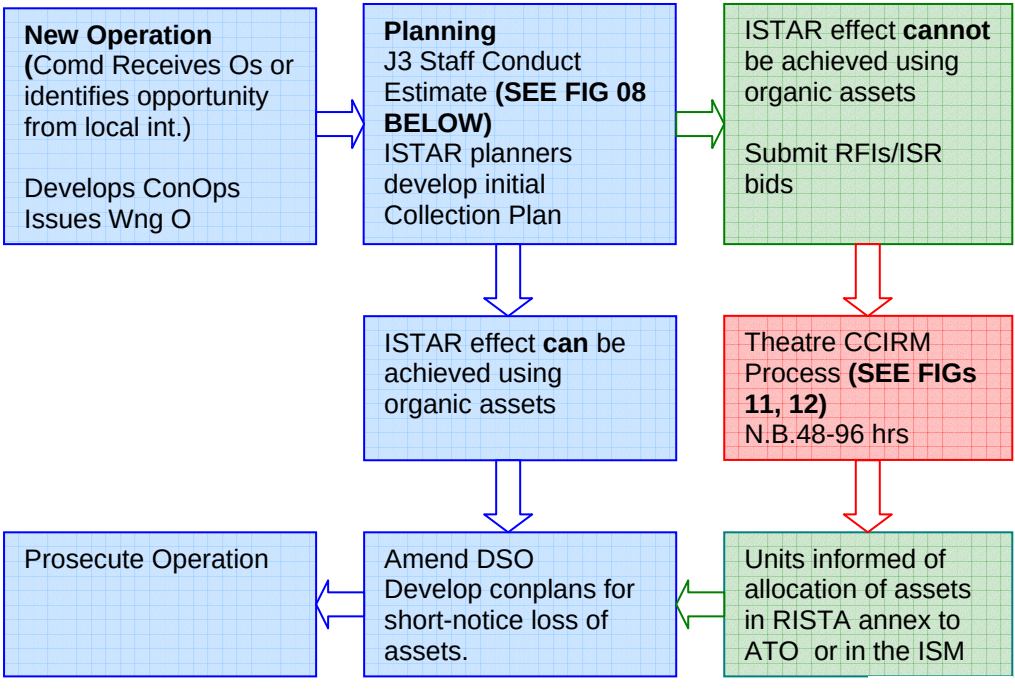


Fig. 07

ISTAR Functions in the Combat Estimate

33. The ISTAR contribution to the Combat Estimate is displayed in Fig. 08 below:

Prelim/ Prep
- **Rx orders**

ISTAR Action:
- Review ISR and Air/ ATO Annex. Issue to ISTAR and Air Cells and task to review and identify any key constraints or 'showstoppers'
- Review ICP and standing allocations (ie platforms already allocated)
- Qs: Where are we on the priority (in plan (ME?), fires alloc and therefore likely call on pri assets?
- What ISTAR will Comd/ 3/5/ Fires/ Tgts need? (initial stab)

Output:
- Issue initial guidance to ISTAR Staff
- Issue Initial Wng O to organic ISTAR FEs.

Q1 What are the en doing and why?

ISTAR: Q1 is the critical q to establish the foundation for planning. Ch/ SO2 ISTAR must manage/ 'own' the delivery of the q but hand off the detail to other cells (geo etc). If Q2 is happening simultaneously Ch/ SO2 ISTAR must balance time

BAE: How does the en influence the op?
- **Terrain O'lay** – Movt opportunities. Must incl en and FF ie choke pts, veh movt condns, impact of weather (ie on flying, vehs, EO/ IR)
- **Human/ Cultural/ Ethnic O'lay** – Aim to illustrate our understanding of the area ie cultural knowledge, extent of influence and consent,

ISTAR Action: Ch ISTAR owns the process. G2/ J2X, Influence, Engrs and Geo tasked to produce (some standing products).
- Qs: Can IMINT reqs be identified? ie Request imagery from JARIC, Standing Imagery library, Geo tasked?

Output: IR Mgt plan and process. IRs will be produced from start of planning (prelims). RFIs generated should be fed into appropriate cells/ external orgs throughout. G2 resp.

Threat Evaluation (Doctrinal O'lay) Analysis of the en.
- En strengths, capabilities and weaknesses
- En COG analysis
- Draft Most Likely and Most Dangerous CoAs

Cell Action: G2 produce. Must illustrate the realistic expectations of en activity to inform Q2 and further planning.
- RFIs: Throughout Th Eval and Integration questions

ISTAR PROCESSES

Threat Integration

- **Situation O'lay** – Poss en CoAs as they could happen within the BAE condns identified ie rtes, compounds etc
- **Event O'lay** – Sync of en CoAs and indicators of which CoA he is adopting
  - o **Draft NAIs and TAIs**
  - o **Draft HVTL**

ISTAR:

- Sit O'lay – Identifies broad areas of interest. Done by G2 Cell.
- Event O'lay
  - o Critical O'lay that should form the basis for production of DSO/M.
  - o Production led by Ch/ SO2 ISTAR; all cells present. Run through CoAs and id what the IRs (ie NAIs) are and areas would need to have effect (TAIs).
  - o Draft DSO Matrix should be used to record draft NAI/ TAIs.

Output:

- Sit O'lay.
- Event O'lay:
  - o Draft DSO/M (ie draft NAI/ TAIs)
  - o Draft HVTL
  - o Developing IR Matrix
  - o Feed Draft Sync Matrix (COS Resp) with key constraints etc.
  - o Draft ICP/ ISTAR Sync Matrix produced

Output: The Q1 Backbrief.

- Led by Ch/ SO2 ISTAR. The fusion point to deliver awareness of en, G2 assessment, ISTAR capability avail to Fmn. **Q1 DEV OF PRODUCTS CONTINUES THROUGHOUT (ie DOESN'T END AT END OF Q1)**
- Intro (ISTAR); Force laydown/ Bdrys; Env Analysis (Terrain, Weather, Cultural/ Influence); Th Evaluation (En str and vulnerabilities, assets and caps); Threat Integration: Situation O'lay - MLCOA/ MDCOA; Event O'lay – What? (PIRs), Where? (NAIs) Who and how? (recommend collection options)

Q2 What have I been told to do? Msn Analysis

ISTAR:

- Ch/ SO2 must attend.
- Understand Comd's view of the op.
- Identify IRs and collection priorities.
- Confirm Comd's CIRs

Output:

- If simultaneous feed Comd's views into Q1 dev.
- Cleared (through Comd/ COS) Collection Priorities.
- Confirmed (by Comd) CCIRs (if not produced must prompt).

Q3 What Effects do I need to achieve?

ISTAR:

- Attend PPG.
- Understand broad CoAs being developed and what would be reqd to collect int/ info to cfm CoA selection

Fig. 08

ISTAR PROCESSES

Q4 Where do effects need to be achieved? ← Normally considered together → **Q5 What resources do I need to achieve effects?**

ISTAR: Likely ISTAR sp similar to each CoA.

- Will req a layered matrix of collection with large 'searchlight' effects to trigger, prompt and cue more refined 'torchlight' assets.
- Identify what asset could answer NAIs.
- Can organic assets achieve if not then external sp requested (ISR and Coll Mgt process).
- Availability (of collection assets) is key constraint and must be fed into CoA dev. Answers and int collected must also be fed in.

→ **Output:**

- ISTAR Plan/ CONOPs (incl msns/ task to organic FEs
- DSO/M
- Request for external sp.

Q6 When and where do actions take place in relation to each other? → **ISTAR**: Dev layered matrix (in time and space) of organic and external assets → **Output:**

- ISTAR Sync Matrix
- ICP

Q7 What control measures do I need to impose? → **ISTAR**: BM measures reqd, C2 details, dissemination plans, CONPLANs.

Decision Brief → **G2/ISTAR** Update; Answers to RFIs/ CCIR assessments, DSO/M (for each CoA), ISTAR plan for supporting key effects, areas of risk and mitigation.

Wargame → **ISTAR**: Play FF role and prov ISTAR input from ICP/ DSOM. Finalise DSO/M; ICP; ISTAR Sync based on output.

Production and Delivery of Orders → **ISTAR**: Deliver G2/ ISTAR Annex, DSO/M/ ICP/ ISTAR Sync Matrix.

RFIs and ISR Requests

34. Once an ISTAR planner has confirmed that his ISTAR requirements cannot be met from within organic assets, and he has drawn up a provisional collection plan, he needs to submit ISTAR bids. Critically, if the requirement cannot be met from within organic assets, an ISTAR planner should either pose an intelligence question, or bid for an ISTAR product. He should not bid for an asset. In so doing he allows the Collection Managers further up the chain to determine the best platform to answer the question, and thus maximise collection capability with the limited assets available. There are two processes for bidding for ISTAR products (although these may vary in different theatres):

35. **Requests for Information.** This is the preferred process and is used in theatres by units and sub units to ask for intelligence from formations and above. It can be used to ask for a piece of information the recipient is known to have (such as locations of previous operations.) It can also be used as a tool to ask for a piece of information that the recipient is known not to have. ie although it is called a ‘request for information’ it can be the tool by which units submit requests for intelligence support to future operations. It is also the format in which strategic intelligence questions to DIS and other OGDs are presented.

36. When making an RFI the following key information must be included: (An example of an RFI is included at Fig. 09)

a. **TASK DETAILS.** Customers must decide above all what question they wish to ask. Justification, background details and non ambiguous questions will allow the right assets to be tasked and prevent wasted collection.

b. **PRODUCT REQUIREMENT.** Customers must make clear in what form they want the answer to be presented. In so doing they must be as accurate as possible. (For example they should not ask for 10hrs of FMV if they only need 4hrs.) If in doubt they should include as much information as possible to maximise the chances of the mission managers finding an appropriate platform.

C. **IMPACT STATEMENT.** Customers should explain the impact of the intelligence not being received on time. (eg Flagstaff will not receive a full brief, or the operation will not take place, or serious degradation to operational capability etc.) This will assist in the prioritisation of assets.

d. **DISTRIBUTION.** Customers should list the names of everyone to whom the responses are to go, including name, email address (with system), full postal address, or callsign.

e. **CLASSIFICATION REQUIRED.** Customers should state clearly the classification at which they can receive an answer. They should also clearly identify a preferred medium for that answer (eg hard copy or e-mail.).

f. **REQUIRED BY DATE.** Customers should never offer ‘ASAP’ as a required by date. The analysts need a firm date to which to work. Short deadlines may be accommodated, but as a rule all RFIs take 96 hrs from the time of receipt from formation level until the platform is allocated. This is to allow for the theatre CCIRM process to be followed. (See below)

37. **ISR Requests.** This is the format by which formation headquarters (or equivalent) submit their consolidated bids for ISTAR assets to higher headquarters. In many cases units may be forced to fill in ISR requests themselves. They stand a much better chance of receiving an asset to support them if they are completed accurately.

38. The ISR nomination form is available to bdes on NATO SECRET and SIPRnet. The procedure for getting ISR nomination forms from bdes to units and sub units will vary in each theatre. SO2 ISTAR in each bde will direct units as to how they can pass ISR requests to bde headquarters within the constraints of their local IT systems. (Normally this will be done on JOCs, or the theatre BG Secret IT system.) When filling in an ISR request form the following should be considered.

a. **LOCATION OF THE TASK.** To be given in Lat/Long (where possible.)

b. **DESCRIPTION OF THE TARGET.** To include as much information as possible, including the reason for the task. This will help confirm the most appropriate collection platform (and allow for assessment by the correct agency if necessary.)

c. **TYPE OF PRODUCT.** This is key. Correct description of the requirement will allow the Mission Manager to get the most out of his assets. Customers should not bid for more than they want, and include a description of how they intend to use the product. In many

cases. Mission Managers may not be able to meet the exact requirement, but will offer something else instead.

d. **DISSEMINATION.** Customers must always be clear how they wish to receive the product, and in what time frame.

39. An example of an ISR Form is at Fig 10.

NB. **Quality Control of ISR Requests.** Bids stand a far better chance of being accepted if they are accurate, concise and realistic and it is the job of the ISTAR manager to exercise quality control ISR on requests before they are sent up the chain.

Requests for Information (RFIs)

NATO UNCLASSIFIED

Request For Information: *(Example in Brackets)*

CCIRM USE ONLY
RFI NUMBER: AF02 00XX
DTG: DTG (DD-HHMMZ-MMAA)
STATUS: **PENDING**

ORIGINATOR:	(Your Unit)	*(1 RIFLES BG)*
	(Your Name and Rank)	*(Capt Jones)*
	(Telephone Number)	*(OSCA Red 1234)*
	(Email Address)	*(MD7 – 1 RIFLES-OPS-OFFR)*
	(Your Internal RFI Number)	*(1RIFBG 0725)*

PRIORITY: ROUTINE

Routine - The requirement requests background information or information not directly affecting ongoing planning or operations.
Priority - The requirement requests information for ongoing planning or operations and/or requests information needed in the next 7 to 14 days.
Immediate - The requirement requests information critical for ongoing planning or operations and/or information required in less than 7 days
Flash - The requirement requests information critical for the information of the concerned organization and for situations where lives are at risk.

TARGET / AREA LOCATION DETAILS (COORDINATES IF APPLICABLE):

SUBJECT: *(Identification of Taliban activity in area of compounds in villages South of Sangin District Centre)*

SPECIFIC QUESTION: (Limit to one question per RFI)

(Please provide intelligence to confirm whether compounds in the area of grid SU 983672 are currently in use by Taliban fighters or pose a threat of direct or indirect fire to UK forces)

LAST TIME INFO OF VALUE (LTIOV): DTG (DD-HHMMZ-MMAA) *(Nil relevant)*

JUSTIFICATION:

(Intelligence required to support planning for Op PLANTAGENET)

COMMENTS:

(Answer required in e-mail format with any relevant imagery by 102359Z Mar 07. Stills imagery but no FMV.)

DISSEMINATION INSTRUCTIONS: EMAIL *(MD7 – 1RIFLES –OPS-OFFR)*

DESIRED CLASSIFICATION AND PRODUCT TYPE:

(Secret UK/US EYES ONLY)

END OF TRANSMISSION

Fig. 09

ISTAR PROCESSES

ISR Request Form

SECRET//REL TO NATO/ISAF//MR

Request for CFACC ISR Support

Unit Tracking Number	
Customer / Unit (Sub-Unit)	
Date and Times of Request	
TO BE FILLED IN BY CUSTOMER	
Required Effects: (FMV, EO, IR, SIGINT, etc)	
Request originated by:	
Customer Contact Information: (Email & Phone)	
Nomination ID Number (either PRISM nomination or unit-specific ID):	
Call-signs & Freq (Primary and Alternate) : Frequency must be UHF in the 225-399 MHZ range	
mIRC Chat Rooms (Primary and Alternate) :	
What is the event/operation:	
Product dissemination requirement:	
Classification of the products:	

Page 1

#	CENTCOM PRIORITY	MNF-I, CJTF-76, OCF PRIORITY	UNIT ID	TGT NAME	TGT DESCRIPTION	BE/RWAC #	TGT LOCATION (MGRS)	TGT LOCATION (LAT/LONG)	ETIOV	LTIOV	EEI/TPEE	SIPR mIRC ID	REPORTING INSTRUCTIONS
			Unit (Sub-Unit or applicable)	Name	(Physical description to aid in acquisition)	BE Number / RWAC Number	(MGRS)	(LAT/LONG)	(ZULU)	(ZULU)	(intel report that cued collection, task, purpose, effect, end state, etc) (Task include time of desired coverage)	(SIPR Mirc Primary and Alt ID)	(SIPR Mirc Primary and Alt ID)

Fig. 10

THE CCIRM PROCESS

40. Collection Coordination and Intelligence Requirement Management (CCIRM) is the name given to the process by which RFI or products are collated, prioritised, and allocated to platforms. The process is largely similar in operational and non operational theatres, although local variations exist, and the system is evolving continuously. In basic terms the system in operational theatres is as follows:

a. Units bid to Bde using the RFI or ISR format for a product. Bde submits its consolidated bid to Division (RC (S) or MND (SE), who will prioritise bids then allocate an asset if they can support it, or pass it to Corps HQ. Similarly Corps HQ (MNC-I or HQ ISAF) will allocate an asset or pass to the Combined Air Ops Centre (CAOC), responsible for allocating all air ISTAR assets to all theatres.

b. CAOC will ask the UK Air Component Commander (UK ACC) to satisfy UK bids with UK joint assets. If this is not possible they will attempt to satisfy the bid with coalition assets. To do this the bid is passed to the Mission Managers for each product type (ie IMINT, MASINT etc.) who decide the best platform to satisfy the request.

c. The allocation of assets is published in two products. Firstly the theatre Air Tasking Order (ATO) contains a ‘RISTA’ annex which shows all ISTAR flying missions. Secondly the Intelligence Support Matrix (ISM) is published. This is effectively a DSO from which units can extract their relevant taskings. See Figs 11 and 12 for theatre examples.

ISTAR PROCESSES

Theatre CCIRM - AFGHANISTAN

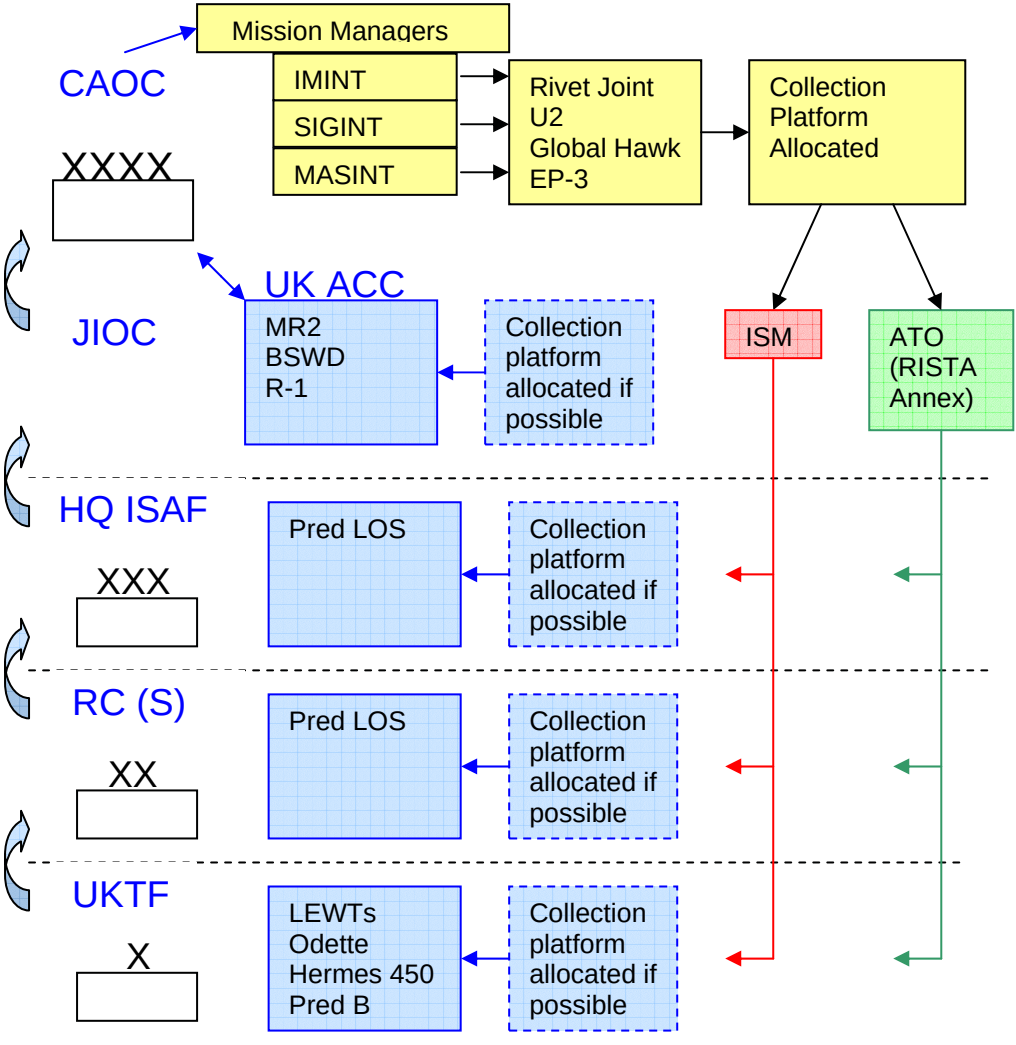


Fig. 11

ISTAR PROCESSES

Theatre CCIRM - IRAQ

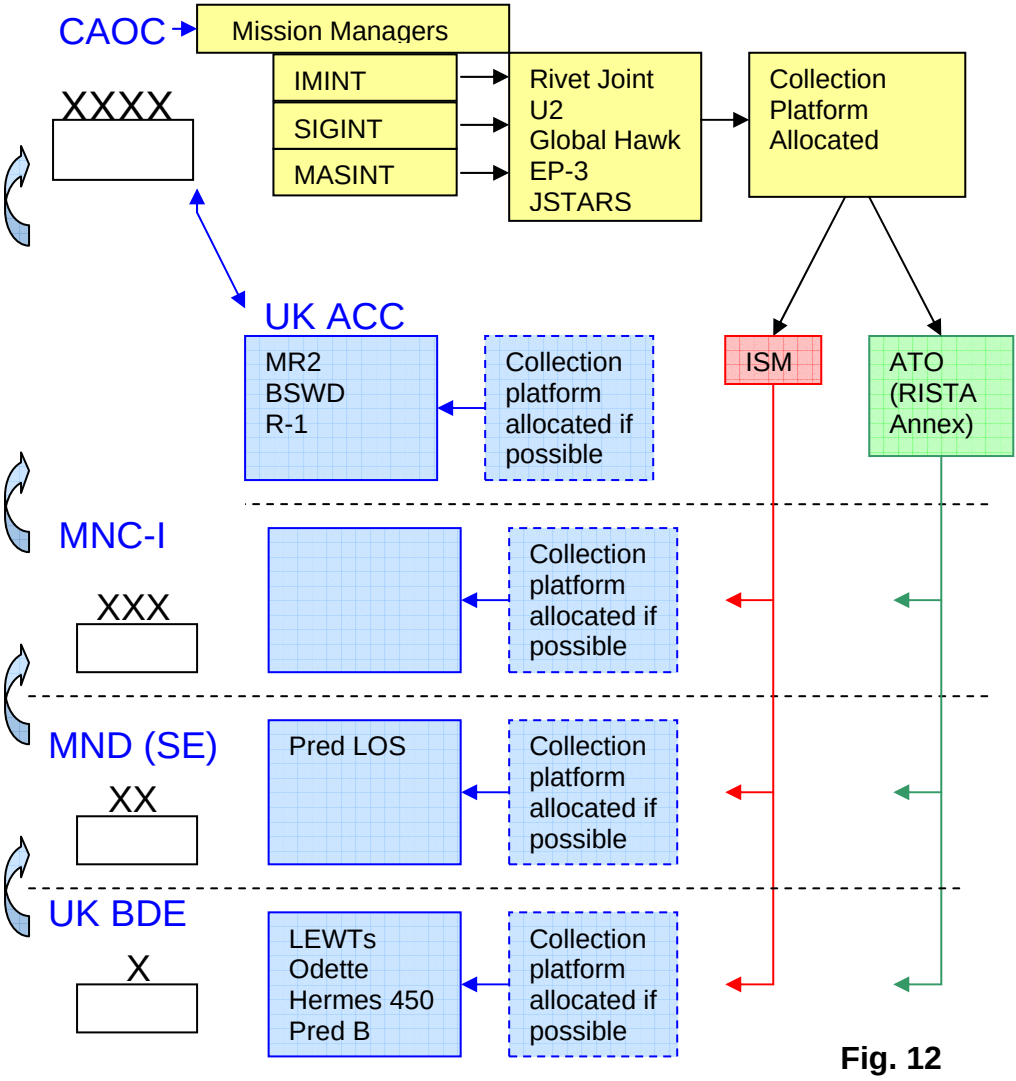


Fig. 12

SECTION 4 - ISTAR PRODUCTS

What product to ask for?

41. When submitting a RFI or ISRR a customer must have a clear understanding not only of the question he is posing, but also the format in which he is requesting the answer. ISTAR product can be disseminated in a number of different forms. The principal types of intelligence for troops in theatre are IMINT, SIGINT, MASINT, GEOINT and HUMINT. There is a also a group of ISTAR capabilities whose products are less clearly defined, but whose capabilities provide valuable force protection or surveillance benefits (such as weapon locating systems.)

42. Listed in the following pages are some of the capabilities and limitations of each of the product types listed above, and some of the considerations for customers bidding for these products.

IMINT

43. Imagery intelligence (IMINT) is available in several forms. Some IMINT products are kept in archive at national or coalition level (the most obvious example is ‘Google Earth’ on open source.) Other products need to be collected for a specific operation. Before bidding for IMINT it is critical that the customer understands what he wants to learn from the imagery, and confirms that he has a viewing platform capable of supporting the product. IMINT product is categorised either according to its position in the electro-magnetic spectrum or the capability it provides. The main media for IMINT products are:

a. **Electro-Optical (EO).** This covers all forms of colour and black and white ‘daylight’ imagery. It can include Full Motion Video (FMV) or photographic stills, taken on either wet film or by digital processor. Most aerial IMINT platforms (including UAVs) carry an EO sensor, and many can remote the imagery realtime to a Ground Control Station (GCS) or Remote Viewing Terminal (RVT).

b. **Infra-Red Thermal (IR).** This is available as FMV or stills. Although the image definition and range is often poorer than EO, it can give clearer imagery in poor light and weather conditions. Many aerial EO platforms also have an IR sensor, which can be downlinked to the same ground station.

c. **Synthetic Aperture Radar (SAR).** This can be categorised as both IMINT and MASINT and a good resolution picture will give similar imagery to black and white EO. It is employed in poor weather conditions and has the ability to see through clouds.

Dissemination of IMINT

44. When bidding for IMINT, the customer must consider how he is going to view the product. For example, a helicopter crew taking digital photographs in transit can easily hand over the images after the flight. Other stills and FMV require more planning:

45. FMV is available as Streaming Video (realtime imagery), Near Real Time (NRT – with a 4 to 20 second delay) or recorded. Streaming video will require an RVT which can achieve a 'handshake' with the relevant sensor. NRT digital imagery can be sent from digital cameras over data networks (eg from an OP to an ops room.) Recorded Imagery is downloaded, assessed and disseminated on completion of the mission. Customers should consider dissemination time and platform in their planning.

46. Photographic stills can be taken using wet or digital film, or by satellite. The advantage of using satellites is that the product can be assessed to answer the correct intelligence question at the appropriate agency. In the UK This is done at a national level by the Joint Aerial Reconnaissance Centre (JARIC) who have a rep in the OISG (and may have others at Task Force level and below.)

SIGINT

47. SIGINT is an invaluable tool for providing information on enemy locations and intentions, and is often the cue for tasking IMINT or physical surveillance tasks. Although there are three types of SIGINT, land forces are only likely to be exposed to the products from Communications Intelligence (COMINT). (The nature of operations in Iraq and Afghanistan does not often require Electronic Intelligence (ELINT) and Foreign Instrumentation and Signals Intelligence (FISINT) for operational intelligence.)

48. **COMINT.** Often used in lieu of the term SIGINT, COMINT can be collected from the tactical (patrol) level up to the strategic (coalition) level on a range of platforms. Each of these platforms can collect against a number of communications systems, ranging from small hand held ‘push-to-talk’ radios to fixed and mobile telephone networks. The principal uses of COMINT include:

a. Identifying local and immediate threats to forces on the ground

b. Identifying and confirming the location, actions and intentions of possible targets

c. Identifying targets for future intelligence collection

Dissemination of SIGINT

49. The collection of SIGINT can be complicated and SIGINT dissemination to customers will depend on the request and operational environment. This can vary from specialist attached

support with SIGINT equipment at patrol level to a formal response to an RFI. In general, dissemination to customers is done in one of the following ways.

a. **LEWT.** The Light Electronic Warfare team is an EW sect which is held at formation level but usually attached to a sub-unit or unit to provide tactical EW support. This is most commonly used to provide tactical intercept and DF capability to sub-unit operations, both in identifying local insurgent activity, and identifying local networks.

b. **SO2 ISTAR.** This appointment acts as the point of contact and conduit for all other SIGINT within the bde, although it may come from a number of sources. Land Organic SIGINT is coordinated in the the Electronic Warfare Coord Cell (EWCC) and disseminated to the appropriate customer by the ISTAR cell. SIGINT material varies, but commonly includes names and locations (including traces) of possible targets.

c. **GCO.** The Government Communications Officer acts as the link for all SIGINT collected and assessed above Land Organic level. This includes UK Joint and Coalition assets as well as SIGINT originating from OGDs and foreign allies.

MASINT

50. Much of the capability covered by Measurement and Signals Intelligence (MASINT) is classified Secret and above. MASINT works on the principle that everything on the earth's surface leaves a form of signature that is measurable in some way. For example, changes in patterns of movement over certain areas can be measured by MASINT.

51. **Ground Moving Target Indicator (GMTI).** A form of MASINT which requires a specialist analyst, although on many coalition collection platforms this can be done at the point of collection. Because of analysis and connectivity limitations the product is generally relayed to a bespoke GCS and disseminated to the customer thereafter. It is useful for identifying movement patterns over a wide area (for example identifying routes over land borders.)

Dissemination of MASINT

52. Because of the requirement for specialist analysis, the product is generally not available via RVT to remote locations. Rather it is downlinked to a GCS in theatre (or specialist analyst out of theatre) and disseminated to the customer via secure IT network thereafter.

GEOINT

53. Geospatial Intelligence (GEOINT) gives the customer an intelligence product which visually depicts physical features and geographically referenced activity on or just below the earth's surface. It can combine IMINT products taken from a range of platforms, with mapping or other geo data which allows the analyst to detect physical change over a period of time. Change detection can be as simple as disturbed earth, but may answer an IR relating to local activity.

54. Collection platforms include UAVs, aerial ISR platforms, government satellites and even commercial satellite imagery. The necessary product fusion required to produce valuable GEOINT means that it must inevitably come from a trained analyst, although some coalition aerial platforms carry an analyst on board.

55. Common uses of GEOINT include identification of patterns of activity (such as movement of people or vehicles over an area over a period of time) or even IPB support to offensive operations.

56. Basic GEOINT can be produced locally; some BGs even have a GEO cell, although this tends to be equipped only to produce basic GEO products. More commonly, the requirement for multi product fusion means it will probably be analysed at Fusion Cell or agency level, and distributed back in to theatre through accredited IT systems (ie delivery to FOBs must be considered when asking for this product.)

HUMINT

57. Human Intelligence (HUMINT) covers all intelligence derived from human sources. It is difficult to plan large scale collection, but it can provide critical and unique insights in to local patterns and networks. HUMINT is commonly used to identify hostile planning, and to cue further collection against suspect targets. The number of possible HUMINT sources is often underestimated. Some of the most common include

58. **Strategic HUMINT.** Strategic HUMINT can be derived from a combination of HUMINT sources but is most commonly collated and assessed by SIS for a national strategic audience. Content tends to target national political and diplomatic trends or individuals, but it can also identify intelligence with operational and tactical significance. Strategic HUMINT products and requests for support will normally be provided through the OISG.

59. **Field HUMINT.** Field HUMINT teams (FHTs) are generally only deployed in operational theatres and are normally organic to the land component. They can work in both an overt and covert posture and the intelligence they provide is at the operational and tactical level. The majority of it is derived form agent contacts, debriefs and interrogation. Because of the necessary autonomy within their role, they are difficult to task directly, but the intelligence they produce can be fed back in to the formation quickly.

60. **Routine Patrolling.** When routine ‘green’ patrols have contact with the local population they can collect valuable HUMINT. Collection opportunities will be determined in part by the environment, and the raw information must not be treated as intelligence until it has been assessed for accuracy and reliability. Iintelligence from routine patrols can be used to cue further directed collection and identify patterns which have operational significance.

61. **‘Walk-ins’.** ‘Walk-ins’ usually refers to information provided voluntarily (and unexpectedly) by a local source. This intelligence can be a unique source with knowledge of imminent activity or threat, but the collector must balance this with the need to assess and corroborate the information (which includes assessing the motives of the source.) The quality of information from a walk-in can also be limited by the source’s fear of compromise and retaliation. Whilst walk-ins can be vary valuable, the act of recruiting and running agents should only be done by trained specialists.

62. **Private Security Companies (PSCs).** PSCs frequently recruit former members of the military and relations (either formal or informal) can often have useful intelligence dividends. It should be stressed that units must not trade intelligence; the classification of any information must be applied rigorously.

Dissemination of HUMINT

63. Almost all HUMINT will be disseminated via the J2 cell within the formation headquarters, and down through the appropriate intelligence representatives. RFIs should also be directed to the J2 cell (through the ISTAR representative if that is the system employed in that theatre.)

Weapon Locating and Force Protection

64. In addition to the products listed previously in Section 4 there exist a number of other capabilities which do not comfortably fit into any product category. This includes capabilities which provide force protection at security force bases (such as CCTV) and weapon locating equipment capable of identifying the launch site of indirect fire weapons. It is common for mutually supporting assets to form a ‘Force Protection Bubble’ around a given location.

65. Most force protection assets provide real time EO and/or TI imagery in a given radius and can be used to cue other assets such as indirect fire. In some cases tactical SIGINT systems have also been used to identify threats to a specific base, and have been incorporated in to the Force Protection Bubble.

66. Weapon locating is normally conducted by either radar or acoustic sensors, and allows operators to identify an assessed firing point to a sufficient accuracy to be able to direct fire on to it. Most systems are operated by specialists and are land organic assets.

67. More information about systems in both these categories is included in Section 5.

SECTION 5 - ISTAR ASSETS

68. This section contains information on the capabilities of a number of ISTAR collection assets. The information includes the type of platform and sensors carried, and the level at which the asset is held and tasked. The three levels are:

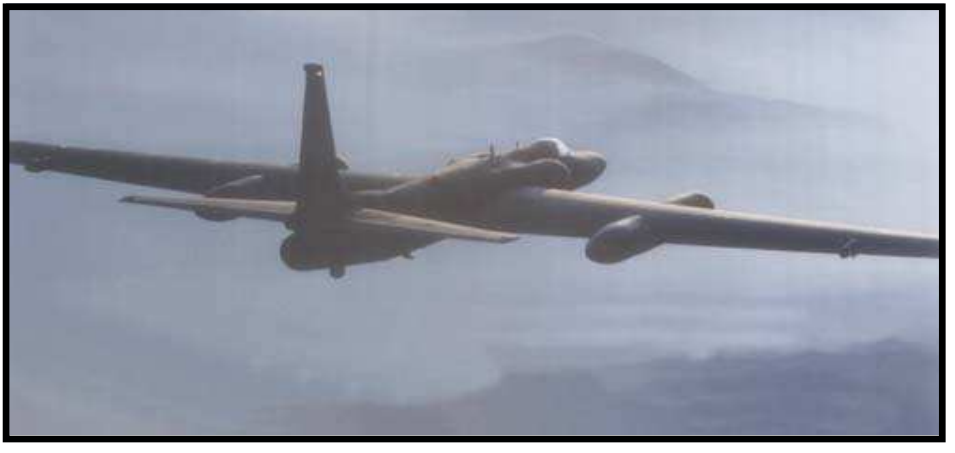
69. **Coalition.** The highest level. Coalition assets are controlled by the CAOC at Al Udeid in Qatar. From here they are allocated to a theatre of operations. (This can include major theatres such as Iraq and Afghanistan, or any other theatre considered to be strategically important.) Allocations are made on a priority basis by mission Mangers for each product type (ie IMINT, SIGINT etc.)

70. **UK Joint.** The UK Air Component Commander (UK ACC) has control over all UK owned assets, and sits in the CAOC, acting effectively as UK LO to the CAOC. On receipt of an ISR request he will always attempt to answer it using UK assets. When this is not possible it is passed up to the CAOC.

71. **Land Organic.** These are assets which are held by UK land forces, either at formation, unit or sub unit level. An ISTAR planner should always aim to satisfy ISR requests from within his organic resources, and when making an ISR bid should have a conplan for filling ISTAR gaps if the assets are withdrawn at short notice. (This is common in Iraq and Afghanistan where assets intended to support operational planning are often redirected to support troops in contact.)

Aerial ISR Platforms

U-2S/U-2R (Coalition)



Key Characteristics:

- Altitude: 70,000+ Ft
- Airspeed: 470kts (460kts w/SPUR)
- Endurance: (Non-surge) 7-9 hrs (max 11 hrs)

Capabilities:

- SIGINT Range 250 Nm
- IMINT Range 80 Nm/ELINT DF
- LOS or BLOS (ETP, SPUR) downlink available
- EO, IR, SAR and wet film available
- Image quality: EO NIIRS 6-7, IR NIIRS 4-5

Aerial ISR Platforms

E-8C JSTARS (Coalition)

Key Characteristics:

- Modified B-707
- Operational alt: 29,000-42,000ft
- Airspeed: 450kts
- Endurance: 5 hrs unrefuelled; 24 hrs refuelled

Capabilities:

- MASINT (GMTI)
- SAR
- Data exploited on board and down-linked (LO preferred)
- Realtime Airborne C2

Aerial ISR Platforms

AP-3/P-3C ORION (Coalition)

Key Characteristics:

- Modified C-135 airframe
- Operational alt: 29,000-38,000ft
- Airspeed: 380-420kts orbit; 430kts cruise
- Endurance: 4 hrs on target at range of 1 000 Nm

Capabilities:

- EO/IR stills
- SAR stills
- Does NOT give a live IMINT feed and no analyst on board, but can carry an LO with live comms
- Image quality: EO NIIRS 5-6, IR NIIRS 4-5

Aerial ISR Platforms

NIMROD R1 (UK Joint)

Key Characteristics:

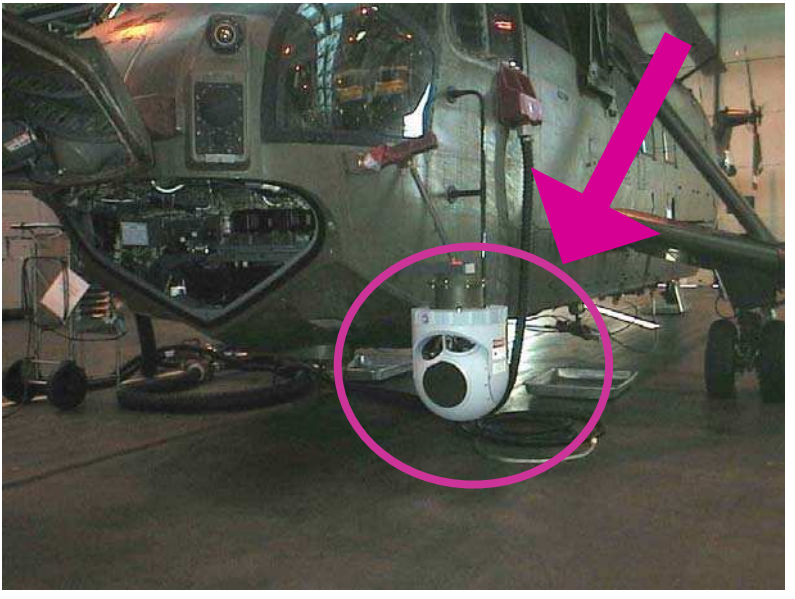
- Altitude: 30,000 – 42,000 ft
- Endurance: 9 hrs (15 hrs refuelled)
- Prioritised for UK operations

Capabilities:

- HF, VHF, UHF, SHF ELINT
- HF, VHF, UHF COMINT
- DF to 1000 MHz (3km accuracy with no triangulation)
- No realtime downlink – analysis and exploitation occurs at Nimrod ground station or in UK

Aerial ISR Platforms

MX-15 POD (UK Joint)



Key Characteristics:

- EO/IR sensor which downlinks to Longhorn II RVT
- Mounted on Sea King, Nimrod and Defender 4000
- Operational altitude 4 000m (overt) and 6 000m (covert)

Capabilities:

- High Quality EO/IR FMV at low, medium and high altitude
- Recordable imagery for later exploitation

NIMROD MR2 (UK Joint)

Key Characteristics:

- Endurance: 8-9 hrs
- Altitude: 20 000 – 42 000 ft (13 000 for TICs)
- Prioritised for UK operations

Capabilities:

- EO/IR FMV
- Realtime downlink to Longhorn II RVT
- On-board LO available
- Image quality: EO NIIRS 5-6, IR NIIRS 4-5

Aerial ISR Platforms

BROADSWORD (UK Joint)

Key Characteristics:

- Endurance: 4 hrs
- Overt and covert operation
- Operational altitude 4 000m (overt) and 6 000m (covert)

Capabilities:

- EO/IR FMV
- Realtime downlink to Longhorn II
- Image quality: EO NIIRS 5-6, IR NIIRS 4-5

HARRIER GR-7/GR-9 (UK Joint)

Key Characteristics:

- Operational alt: 18 000ft (13 000 ft for TiCs)
- Airspeed: .98 mach
- Endurance: 1-2 hrs
- Equipped with Joint Recce Pod (JRP) and SNIPER

Capabilities:

- JRP: High Quality EO at low, medium and high alt.
  - 40 mins recordable mission tape
  - Can be tasked in flight but sensor can only be switched on/off 16 times
  - JRP images must be downloaded later
- SNIPER real-time downlink to ROVER 3 on GR-9
- Image quality: EO NIIRS 5-7, IR NIIRS 4-5

TORNADO GR-4 (UK Joint)

Key Characteristics:

- Operational alt: 5,000ft
- Airspeed: .98 mach
- Endurance: 7 hrs (if refuelled)
- Equipped with JRP pod and LITENING 3

Capabilities:

- JRP: High Quality EO and IR at low, medium and high alt.
    - 40 mins recordable mission tape (no realtime)
    - Can be tasked in flight (vertical imagery only)
    - 30 points of interest per flight
    - Sensor can only be switched on/off 16 times
- LITENING 3 real-time downlink to ROVER 3
- Image quality: EO NIIRS 5-6, IR NIIRS 4-5

GLOBAL HAWK (Coalition)

Key Characteristics:

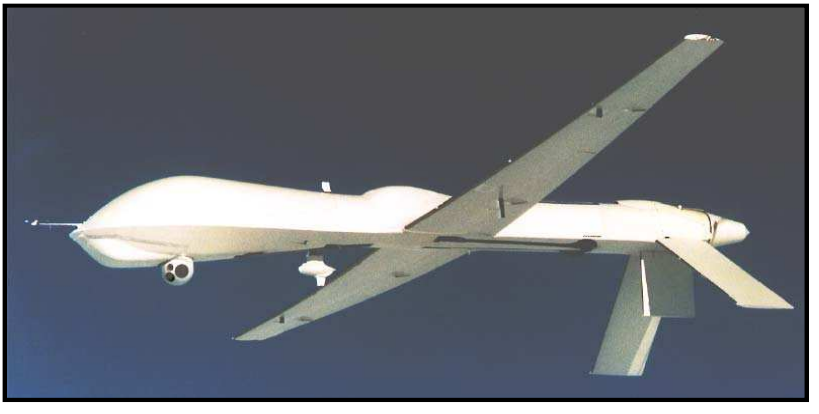
- Operational alt: 50,000-60,000ft
- Airspeed: 345kts orbit
- Endurance: 35 hrs (22 avg OEF msn)
- Piloted remotely via satellite

Capabilities:

- EO/IR (Image quality: EO NIIRS 6, IR NIIRS 5-6)
- SAR/GMTI
- Can image 40,000 square miles in 24hrs
- Images relayed near-real time to GCS then via SIPRnet
- Good for rapid re-visit (change detection) or “standing decks”

Unmanned Aerial Vehicles

PREDATOR A (Coalition)



Key Characteristics:

- Operational alt: 7,000-22,000ft
- Airspeed: 85kts cruise (max 120kts)
- Endurance: 16-22 hrs (out to 500Nm)
- Flown LOS or remotely by satellite from US

Capabilities:

- EO/IR FMV (to 12 Nm), Scene search/SAR
- Downlink to Nellis GCS and ROVER (within 10-20 Nm)
- Pre-strike (PiD, PoL), Strike + Post Strike Recce
- Extensive weather limitations (flight, T/O, landing, cloud – Autumn)
- Weaponised (1-4 x hellfire missiles)
- Image quality: EO NIIRS 6, IR NIIRS 5-6

REAPER (PREDATOR B) (UK Land/Coalition)

Key Characteristics:

- Operational alt: 25, 000 ft (50,000ft ceiling)
- Airspeed: 85kts cruise (max 220kts)
- Endurance: 16-28 hrs (out to 500Nm)
- Flown from Kandahar and controlled LOS or remotely by satellite from US (Downlink to Nellis GCS and ROVER III within 10-20 Nm)

Capabilities:

- EO/IR FMV (to 12 Nm), SAR/GMTI
- Pre-strike (PiD, PoL), Strike + Post Strike Recce
- Extensive weather limitations (flight, T/O, landing,)
- US version carries up to 14 missiles/JDAM/500lb bomb - reduced endurance (UK version NOT weaponised)

HERMES 450 (LYDIAN 450) (UK Land)

Key Characteristics:

- Operational alt: 16 000ft
- Airspeed (loiter): 110 kts
- Endurance: 20 hrs out to 150km LOS (300km if 2nd GCS is deployed)
- EO/IR FMV to GCS and ROVER III (IOC Dec 07)

Capabilities:

- Image quality: EO NIIRS 6, IR NIIRS 5
- Fitted for SIGINT pod

Unmanned Aerial Vehicles

SHADOW (TUAV)

Key Characteristics:

- Operational alt: 7 000ft
- Airspeed (loiter): 110 kts
- Endurance: 5 hrs out to 50km LOS
- US owned and operated (but UK has access to product)

Capabilities:

- EO/IR FMV to GCS and ROVER III
- Image quality: EO NIIRS 7, IR NIIRS 4-5

SCAN EAGLE (TUAV)

Key Characteristics:

- Operational alt: 1500 - 3000 ft
- Airspeed (loiter): 110 kts
- Endurance: 16.5 hrs
- US owned and operated (but UK has access to product)

Capabilities:

- EO/IR FMV to GCS and ROVER III
- Image quality: EO NIIRS 7, IR NIIRS 4-5

DESERT HAWK 1(+)(Mini UAV)

Key Characteristics:

- Operational alt: Up to 300 ft
- Airspeed: 100 kts
- Endurance: 50-60 mins
- Range: 8-10km within LOS
- Bungee Launch

Capabilities:

- EO/IR FMV
- Realtime downlink to DH RVT

DESERT HAWK 3 (Mini UAV)

Key Characteristics:

- Operational alt: Up to 300 ft
- Airspeed: 100 kts
- Endurance: 60-90 mins
- Range: 10km within LOS
- Flown by RA UAV det attached at sub-unit level
- Shoulder Launch

Capabilities:

- EO/IR FMV
- Realtime downlink to DH RVT
- Replacing Desert Hawk1(+)

RAVEN (Mini UAV)

Key Characteristics:

- Operational alt: 150 - 1000 ft
- Endurance: 60-90 mins
- US owned and operated (but taskable through Airspace Control Measure Request)
- Limited by wind, frequency range and battery life

Capabilities:

- EO/IR FMV to GCS and ROVER III
- Image quality: EO NIIRS 7, IR NIIRS 3-4

Weapon Locating Equipment

ASP (Land organic)

Key Characteristics:

- The Acoustic Sounding Ranging Post is a portable passive acoustic sensing system for locating the source of artillery fire and detonations
- Surveyed in and linked to CP via D10 or RAVEN
- 15 mins in to action
- Requires 400-500m baseline

Capabilities:

- Detection range out to 15km with CEP of 50m at 15km

COBRA (Land organic)

Key Characteristics:

- Counter Battery Radar (COBRA) is an active radar capable of detecting multiple batteries of indirect fire systems (including mortars, artillery and rockets.)
- Mounted on Foden IMMLC (with modifed chassis)
- 15 mins in to action
- 1600 mil arc

Capabilities:

- Ability to locate 8 targets simultaneously
- Ability to locate 40 batteries in 2 mins (identifying both location and type munition)
- Detection range out to 40km (50m CEP at 15 km)

MAMBA (Land organic)

Key Characteristics:

- The Mobile Artillery Monitoring Battlefield Radar (MAMBA)
- Based on the Norwegian ARTHUR system and mounted on a Bv 206
- Air portable

Capabilities:

- Ability to locate 8 targets simultaneously (1600m arc)
- Ability to locate 100 targets in one minute
- Detection range out to 30km (50m CEP at 50km)

LCMR (Land organic)

Key Characteristics:

- Light Counter Mortar Radar
- Manpackable (radar weighs 55kg)
- Omni-directional radar able to identify mortar shells (60mm-120mm) from 1km - 6.5km
- Powered by mains, generator or vehicle battery.
- Initialised by 2 soldiers in 20 mins

Capabilities:

- Able to locate mortar firing points to an accuracy of 100m at a range of 5km
- Tracks 20 shells simultaneously

SCARUS (Land organic)

Key Characteristics:

- Man portable intercept/DF systems,
- Targets single channel voice, FHSS and basic data comms in the HF/VHF/UHF frequency range
- Carried and operated by LEWTs

Capabilities:

- Intercept to 10-20km range depending on ground
- Intercept of HF/VHF/UHF comms in the freq range 0.5MHz - 2GHz
- DF of HF/VHF/UHF comms in the freq range 0.5MHz – 1.8GHz

INCE (Land organic)

Key Characteristics:

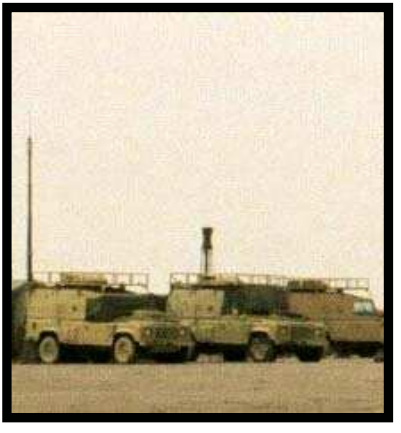
- Interim Non-Communications ESM equipment
- Ability to detect conventional electro-magnetic emissions such as ships and aircraft, and radar.

Capabilities:

- Detection from 70-100km but no voice capability.
- Designed for use in conventional operations but deployed in TELIC and HERRICK.

Direction Finding and Intercept Equipment

QRSC (Land organic)



Key Characteristics:

- Quick Reaction Survey Capability
- Vehicle Mounted with ability to operate covertly and in depth.
- ***Intercept capability for HF/VHF/UHF frequency range***

Capabilities:

- Quickly deployable and generally used to exploit sensitive intelligence. As a result the product is usually classified as STRAP
- Operated by Land Organic forces but generally tasked by OGDs

ODETTE (Land organic)

Key Characteristics:

- Vehicle mounted intercept/DF systems,
- Targets single channel voice, FHSS and basic data comms in the HF/VHF/UHF frequency range

Capabilities:

- Intercept frequencies 0.5MHz – 1 GHz / PF 1.6MHz – 1GHz).
- Intercept in 70-100km range depending on ground

REMOVER (Land organic)

Key Characteristics:

- 21 or 15m mobile ext mast
- Downlink to integral RVT via fibre optic cable and RF connections
- Deployed at unit and sub-unit level

Capabilities:

- TI and EO cameras with recording and playback
- Identify targets at 2km; view movement up to 8km
- Very limited mobility
- Used for force protection of fixed sites
- Can be set up to give overwatch for deliberate ops

REVIVOR (Land organic)

Key Characteristics:

- Aerostat-mounted day and night cameras with fibre link to integral RVT
- Max altitude of 150m

Capabilities:

- Gyro-stabilised TI and EO cameras with recording and playback (balloon must be lowered to change cameras.)
- Identification at 500m – 2km.
- Deflates slowly (and safely) if punctured by small arms fire
- Limited to wind speeds below 30 kts

FORMATION RECCE

Key Characteristics:

- Sabre Sqn of 3 tps of 4 Scimitar and a Sp Tp with snipers
- Surv tp of 4 Spartan with M-STAR
- C&S sqn with TACP and SLT (tac pty to Fmn HQs)

Capabilities:

- Screen and Guard, route recce, and security in conventional ops
- Specialise in Ops/SCS with long range comms
- E-SPIRE and TN/TLS gives TI with accurate target designation
- Useful additional firepower from 30mm

STA Patrols

Key Characteristics:

- Long Range Surveillance and Target Acquisition patrols
- Traditoinally Long Range Target Acquisition but useful ISR capability
- Drawn from Regular and Reserve Components
    - 4/73 - 12 Ptls and TAC Gp
    - HAC - 24 Ptls, Comms, Base and TAC Gp

Capabilities:

- FAC (with Rover 3/Longhorn RVT)
- CCA Controller
- Digital imagery transfer
- MSTAR
- Snipers

Static Covert Surveillance

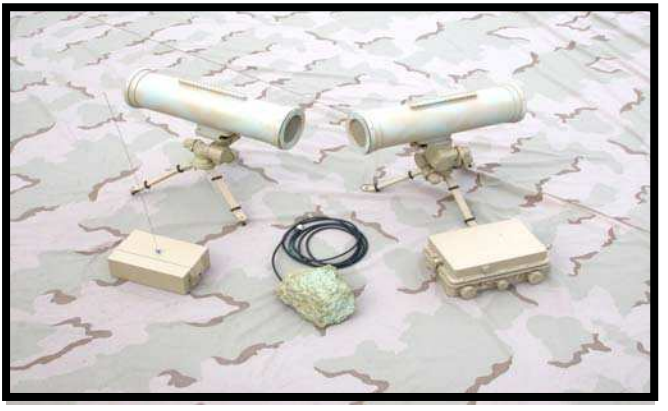
Key Characteristics:

- Usually formed from Bde Surveillance Coy – All Arms
- Trained by COTAT in various surveillance techniques – 7 week cse

Capabilities:

- Technical Surveillance (IMINT) to produce Tgt Packs
- Ltd OP work, surveillance from mil bases/vehs, drive-bys, fly-bys.
- Equipped with PULPIT (3 camera video/stills camera system – ID from stills at 1200m.)
- Trigger ops for BGs

Scorpion (Land organic)



Key Characteristics:

- EO-IR cameras
- US owned, on loan to UK

Capabilities:

- Photo stills at 600-800m
- Direct Satellite feed to INSCOM (USA)
- Images published on SIPR website or e-mailed direct to customers on SiPRnet.

OmniSense (Land organic)

Key Characteristics:

- EO-IR cameras
- US owned, on loan to UK
- Various triggers including seismic, magnetic, acoustic, thermal and PIR.

Capabilities:

- Photo stills at 80-100m
- Direct Satellite feed to INSCOM (USA)
- Images published on SIPR website or e-mailed direct to customers on SiPRnet.

Pulpit (Land organic)

Key Characteristics:

- Camera suite including, submersible, colour security camera, colour zoom, high resolution colour camera, and monochrome low light camera.
- Operator control

Capabilities:

- Photo stills and moving images at ranges out to 200m
- Images remoted to viewing terminal with Digital Video Recorder playback facility

ROVER III/e-ROVER

Key Characteristics:

- Multi-Band receiver working on C, L and KU bands (1.710 - 15.550 GHz)
- Man portable and powered by 117 battery, AC mains power or vehicle battery
- Reception LOS only
- e-ROVER: same hardware with a software upgrade

Capabilities:

- Streaming FMV through commercial software (windows media and NTSC/PAL TV receivers)
- Record and playback capability
- Links to a variety of UAVs and NTISR (see below)

RVT Interoperability

72. Listed below are the principal RVTs in use by coalition forces and the platforms with which they are interoperable.

Rover 3/e-Rover

NTISR:
SNIPER POD
LITENING POD
(mounted on GR-4, GR-9, F-16, F-18)

UAVs:
HERMES 450*
PREDATOR
REAPER (PRED B)
RAVEN (US)
DRAGONEYE (US)
SCATHE VIEW (US)
HUNTER (US)
SHADOW (US)
SWIFT (US)
TERN (US)
POINTER (US)

Longhorn

MX-15 mounted on*:*
NIMROD MR-2
SEA KING (BSWD)
DEFENDER 4000

Bespoke GCS

UAVs:
GLOBAL HAWK
SPERWEHR
DESERT HAWK (1&3)

BASE PROTECTION:
REMOVER
REVIVOR

**** Trials ongoing at the time of printing***

FUTURE ISTAR PROJECTS

73. Current procurement programmes are focussing heavily on ISTAR capabilities and UK Defence is investigating investment in a large number of projects. Some of the most important and relevant programmes are described below:

74. **ASTOR**. Standing for Airborne Stand-Off Radar, ASTOR (also called “Sentinel 1”) is effectively the UK’s equivalent of the US JSTAR. It comprises a Bombardier Global Express airframe equipped with Raytheon ASARS II radar, which will provide SAR and GMTI at ranges up to 160km. It can expoit data on board and downlinks to mobile bespoke GCSs. IOC is 2010.

75. **WATCHKEEPER.** Procured to address the UK’s TUAV capability gap, the WATCHKEEPER project will introduce the WK450 (based on the Hermes 450) which will provide EO, IR, SAR and GMTI capabilities, as well as a target designating facility. The perceived typical mission time is 17 hrs. The system dowlinks via satellite to bespoke GCS, intended to be depoyed by DROPS vehicle. IOC is 2010.

76. **SOOTHSAYER.** Is an integrated Tactical Land Electronic Warfare system, which will provide a range of capabilities, including CESM/ES, ECM/EA, and NCESM. The systems are designed to be mobile units and consist of sensor platforms and C2 platforms. (Roughly, a baseline will consist of 4x sensor units, 1x C2 and 1x liaison.) ISD with the 14 Sigs Regt is 2008 with FOC planned for 2014.

77. **DABINETT.** DABINETT is the project name for a programme of capabilities aimed at coordinating some of the ongoing ISTAR equipment projects and filling the deep and persistent (D&P) collection gaps and. Although it is in the early stages of identifying options for delivery, it will provide capabilities that enable ‘end to end’ process management, direction and planning of tasks, analysis, creation of Int products from all sources/feeds and dissemination. It will also seek to enable Info Mgmt (store, update, search etc) and collaborative working. It is effectively a ‘system of ISTAR systems’. With so many strands, it has no IOC, but aims to be FOC by 2020.

GLOSSARY

ATO	**-**	**Air Tasking Order**
BLOS	**-**	**Beyond Line of Sight**
BM	**-**	**Battlespace Management**
BSS	**-**	**British Security Service**
BSWD	**-**	**Broadsword (Sea King mounted MX-15)**
CAOC	**-**	**Combined Air Operations Centre**
COBR	**-**	**Cabinet Office Briefing Room (Committee)**
COMINT	**-**	**Communications Intelligence**
CEP	**-**	**Circular Error Probable**
CESM/ES	**-**	**Comms Electronic Warfare Support Measures/Electronic Attack (Intercept)**
DIS	**-**	**Defence Intelligence Staff**
DF	**-**	**Direction Finding**
DSM	**-**	**Decision Support Matrix**
DSOM	**-**	**Decision Support Overlay Matrix**
ECM/EA	**-**	**Electronic Counter Measures/Electronic Attack**
EO	**-**	**Electro-Optical**
ESPIRE	**-**	**Enhanced Sighting Periscopic Infra-Red Equipment**
EWCC	**-**	**Electronic Warfare Coordination Cell**
FAC	**-**	**Forward Air Controller**
FE	**-**	**Force Elements**
FHT	**-**	**Field HUMINT Team**
FOB	**-**	**Forward Operating Base**
FMV	**-**	**Full Motion Video**
GCS	**-**	**Ground Control Station**
GMTI	**-**	**Ground Moving Target Indicator**

'GOLD'	**-**	**(Regional Command in a UK security incident - often Constabulary level)**
HUMINT	**-**	**Human Intelligence**
HVTL	**-**	**High Value Target List**
IMINT	**-**	**Imagery Intelligence**
IPB	**-**	**Intelligence Preparation of the Battlespace**
ICP	**-**	**Intelligence Collection Plan**
IMMLC	**-**	**Improved Mobile Medium Load Carrier**
IOC	**-**	**Initial Operating Capability**
ISM	**-**	**Intelligence Support Matrix**
ISR-D	**-**	**Intelligence, Surveillance, Reconnaissance Directorate**
ISRR	**-**	**Intelligence, Surveillance, Reconnaissance Request**
JARIC	**-**	**Joint Aerial Reconnaissance and Intelligence Centre**
JDAM	**-**	**Joint Direct Attack Munition**
JFIT	**-**	**Joint Field Interrogation Team**
JIC	**-**	**Joint Intelligence Committee**
JICB	**-**	**Joint Intelligence Coordination Board**
JTAC	**-**	**Joint Terminal Attack Controller**
INCE	**-**	**Interim Non-Communications ESM**
LEWT	**-**	**Light Electronic Warfare Team**
LOS	**-**	**Line of Sight**
MAS	**-**	**Medium Altitude SIGINT**
MASINT	**-**	**Measurement and Signals Intelligence**
MDCOA	**-**	**Most Dangerous Course of Action**
MLCOA	**-**	**Most Likely Course of Action**
NAI	**-**	**Named Area of Interest**

NCESM	**-**	**Non-Comms Electronic Warfare Support Measures/Electronic Surveillance**
NIIRS	**-**	**National Image Interpretability Rating Scale**
NTISR	**-**	**Non-Traditional Intelligence, Surveillance and Reconnaissance (eg Fast jet)**
NRT	**-**	**Near Real Time**
PPG	**-**	**Principal Planning Group**
QRSC	**-**	**Quick Reaction Survey Capability**
RF	**-**	**Radio Frequency**
RFI	**-**	**Request For Information**
RISTA	**-**	**Reconnaissance Intelligence Surveillance and Target Acquisition (Annex to ATO)**
RVT	**-**	**Remote Viewing Terminal**
SAR	**-**	**Synthetic Aperture Radar**
SCS	**-**	**Static Covert Surveillance**
SIPR	**-**	**Secret Internet Protocol Router Network (US Universal Classified IT Network)**
SIS	**-**	**Secret Intelligence Service**
SLT	**-**	**Squadron Liaison Team**
TACP	**-**	**Tactical Air Control Party**
TIC	**-**	**Troops in Contact**
TUAV	**-**	**Tactical Unmanned Aerial Vehicle**
TN/TLS	**-**	**Tactical Navigation/Target Locating System**
UK ACC	**-**	**UK Air Component Command**