# WHAT IS ISR?
# CLARIFYING ISR AND ISTAR IN AIR POWER TERMS

*ISR has never been more important …*
GEN Moseley

General Moseley's observation on *intelligence, surveillance and reconnaissance (ISR)* is particularly pertinent for air power and air forces that are identifying how they can best realise the benefits of ISR.  The current pre-dominance of *Irregular Warfare* in combination with rapidly advancing technologies and concepts is placing greater demands on ISR and challenging its traditional understanding. Indeed, there appears to be many ideas of what is ISR. This has been further compounded by the misuse of the term ISTAR. There is a need to clarify what is ISR and ISTAR, their relationship to one another, and their relevance to air power. The purpose of this *Pathfinder* is therefore to take an 'operational pause' from the fast paced discussion of 'we need this piece of kit' or 'that definition' and develop a clear understanding of ISR and ISTAR in air power terms.

In military terminology, ISR was coined in the 1990s and gained momentum as an enabler for ideas such as the *Revolution in Military Affairs.* The ADF has been slow in developing ISR concepts, doctrine and definitions. The *2007 Defence ISR Roadmap* describes what ISR does and is, rather than provides a specific definition. The *Air Power Manual* and *The Future Air and Space Operating Concept* (FASOC)



*The plethora of UAVs such as the HERON UAV (currently operated by Canada in Afghanistan) in the battlespace have highlighted the value of ISR to the joint campaign.*
*(photo courtesy of MDA Corporation)*

likewise simply describe intelligence, surveillance and reconnaissance as air power roles that together realise the air power function of *information superiority and support*. Despite ISR being in general use for over ten years, the ADF only adopted an agreed joint definition in 2008.  The ADF embraced the US joint and NATO definition of ISR:  '*an activity that synchronises and integrates the planning and operation of sensors, assets, and processing, exploitation, and dissemination systems in direct support of current and future operations*.' Importantly, the definition indicates ISR is a word rather than an acronym; an important aspect that is often overlooked by those who simply see intelligence, surveillance and reconnaissance as separate entities. There is now a need for air power doctrine to align to the agreed definition and for single-service and joint doctrine to clearly reflect a common ISR understanding.

Recently, there has been an increased tendency to refer to Intelligence, Surveillance, Target Acquisition and Reconnaissance (ISTAR) as distinct to ISR. There is no agreed joint Australian, US, UK or NATO definition for ISTAR. The Australian Army has described ISTAR in developing doctrine as "*the coordinated acquisition of timely, accurate, relevant and assured information that supports the planning and conduct of operations, as well as the targeting and integration of effects*." The term has largely developed in parallel with that of unmanned aerial vehicles (UAVs) where the tactical real-time benefit of UAVs is particularly appropriate to the ISTAR concept. While it is commonly suggested that the *target acquisition* role of UAVs is new, and thus needs to be captured by a new doctrinal term,  what a UAV does now for *target acquisition* is conceptually little different to what PAVETAC provided the F-111 fifteen years ago or balloons provided artillery spotting in the US Civil War. What is new and important is the need to adopt a collective view of that role within a modern, networked context that does not negate the prime importance and benefits that ISR offers.

From an air power perspective, the term ISTAR only has tactical utility due to the ISTAR concept inferring *target acquisition* lying completely within the boundaries of ISR. Modern air power doctrine clearly identifies *target acquisition* as part of the immediate targeting process (Find, Fix, Track, Target, Engage, Assess) and not part of ISR. The Targeting process is simply using an output from the ISR process, which is a key doctrinal difference between the concepts of ISTAR and ISR.

While ISTAR may have relevance at the tactical level with respect to UAV operations, it has little application within

air operations planning where ISR provides the means to effectively synchronise theatre wide ISR requirements and activities within the overall operational campaign plan, and in accordance with strategic and national intent. Overall, there is a need to clearly establish the differences and interfaces between ISR and ISTAR to ensure a clearer understanding of their respective meanings. In Australia, *ISTAR* is not used in the *2009 Defence White Paper* or the current *Defence Capability Plan*, though the need to develop a Defence ISR capability is clearly articulated. This reflects the primacy of the term ISR and the need for air forces to focus on ISR as a key air power role.

Intelligence has always been at the forefront of warfare and air power, with reconnaissance and surveillance first identified as key air power roles in World War I. ISR has increasingly grown in importance and complexity in recent years and is a critical enabler for concepts such as *effects-based thinking* and *network centric warfare*. The development of ISR has paralleled the exponential growth in ISR technology where today, ISR information in the battlespace is potentially limitless. Paradoxically, the warfighter often flags that they do not have enough ISR—demanding more and more. The subsequent need to prioritise and manage ISR activities has partly led to the development of ISR as a system to better synchronise intelligence, surveillance, and reconnaissance activities. This partly explains why ISR is defined as it is and has become so integrated in Air Operations Centres. The 'integrated' nature of ISR is a key notion. As LTGEN Deptula, Deputy Chief of Staff, ISR notes 'intelligence relies on surveillance and reconnaissance for its data and information … we do not know what to surveil … without intelligence.'

Current operations in the Middle East have highlighted how critical ISR is to the conduct of irregular warfare, where one of the most difficult tasks is the finding, fixing, tracking and assessing of an unconventional adversary. The real issue has not been necessarily in finding an adversary or threat, but in identifying them as such, which requires the fusion of information from multiple sources and disciplines and then its transition into actionable intelligence. Simply put, data is not information, and information is not intelligence—intelligence provides the 'so what.' It is in this tactical environment where ISTAR has value in the immediacy of finding, confirming and prosecuting a target.

The battlespace is now populated by platforms with a complex array of sensors. In Afghanistan, the congestion of ISR platforms is causing deconfliction issues where ISR platforms under the control of disparate command elements are unknowingly transiting the operating areas of other platforms resulting in unsynchronised collection and degraded mission effectiveness. Further, as a former Secretary of the Air Force noted '*Every sensor will be a shooter and every shooter will be a sensor, linked across all domains and across the joint and coalition team*.' Doctrinally, this has implications for the command and control of air operations and highlights the need to better integrate the intel and ops staffs supported by sound and robust joint and air power doctrine clearly defining the ISR and targeting processes.

In essence, ISR has become a word—not an acronym much like RADAR—and air forces and the joint military community need to embrace it as such in doctrine. ISTAR and ISR are not the same; they are not interchangeable. ISTAR is not simply ISR with TA added. While acknowledging the importance of ISTAR in the tactical environment and particularly in support of ground forces, ISR remains of paramount importance to air power and provides a critical mechanism that enables complex and diverse operations across the battlespace and thus realises information superiority. It provides an important interface that maps theatre level activities to national level objectives. The fundamental objective of ISR is 'getting the right information, to the right people, in the right format, at the right time'.

- *ISR is a primary air power role enabling information superiority and thus, decision superiority.*

- *There is a need to clearly delineate ISTAR as a purely tactical level activity.*

- *There is a need for single-service and joint ISR doctrine.*

*'ISR is vital to the success of our operations in Iraq and elsewhere'*

General D.H. Petraeus (US Army), Commander Multi-National Force–Iraq (2008)