

UK REMOTELY PILOTED AIR SYSTEMS (RPAS)



The slides in this presentation are

UNCLASSIFIED

SCOPE

- The requirement
- Current RPAS situation
- Future RAF RPAS Ambition
- Lessons from current operations: Implications for air air forces
- Questions/Discussion

The Requirement

- **Policy led, resource informed**
 - SDSR 'Adaptable Britain' posture
 - Affordable force mix
- **Remotely Piloted contribution effected by:**
 - Capability across Air Power roles
 - Versatility and adaptability across potential scenarios
 - Technical risk
 - Acquisition vs support costs?

Present

- **Current operations:**
 - Mini RPA Desert Hawk III
 - Army – Tactical support to sub-unit cdrs
 - EO/IR FMV
 - Radio LOS (15Km); 1.5 hrs; 500ft; 40Kts



Present

- Current operations:
 - Hermes 450
 - Army - Tactical support to unit and formation cdrs
 - EO/IR FMV
 - Radio LOS (150Km); 16 hrs; Alt 13K; Speed 70 - 90Kts



Present

- Watchkeeper
 - OT&E and UK training airspace – 1600hrs pa
 - Parc Aberporth RA (T) / ACP; Salisbury Plain ACP
 - EO/IR FMV; SAR/GMTI; LRF; LM; LTD
 - Army - Tactical support to unit and formation cdrs
 - Radio LOS (150Km); 16 hrs; Alt 13K; Speed 70 - 90Kts
 - Anti-icing

Present

- Current operations:
 - MQ-9 Reaper
 - RAF - Support to Component/Jt Force cdrs
 - EO/IR FMV; SAR/GMTI; LRF; LM; LTD; 4 x HF; 2 x GBU-12
 - Satellite BLOS; 14 – 20 hrs; Alt 20K; Speed 90 – 250 Kts

2011 - 2013

- **Additional Reaper Capability**

- ‘Doubling of the Reaper capability’
 - 36hrs per day to 72 hrs per day
- Increase from 5 to 10 ac
- Increase from 3 to 7 MGCS
- Stand up XIII Sqn; Relocate 39 Sqn from USA to UK
 - Pers and MGCS only; aircraft remain in Afghanistan

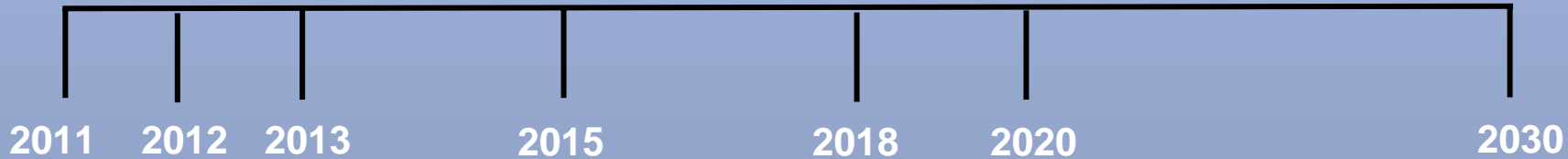


2018 – 2030+

- **SCAVENGER**

- AIR led programme to deliver deep and persistent ISR, with a precision attack capability, across the battle space in support of the JTFC
- Anticipate met in part by MALE RPAS
- French co-operation:
 - *‘Co-operation will enable the potential sharing of development, support and training costs, and ensure that our forces can work together.’*
 - Joint Assessment Phase to be launched later this year

RAF RPAS AMBITION



MQ-9 Reaper

36 hrs/365

OSD?

48 hrs

72 hrs

**Additional
Reaper
Capability**

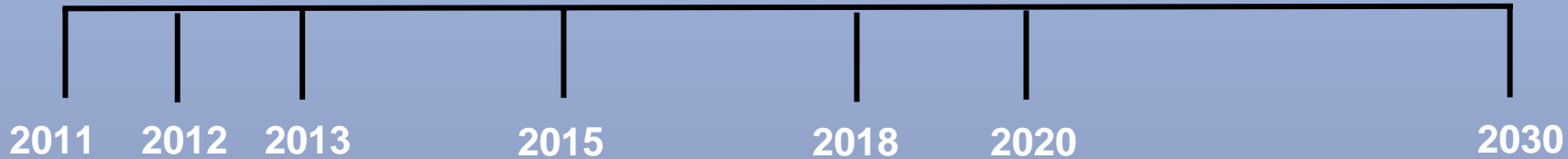
Fr/UK MALE
Jt Assess' Phase

MALE RPAS
Programme

SCAVENGER

UCAS

RAF RPAS AMBITION



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**Additional
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SCAVENGER

TARANIS

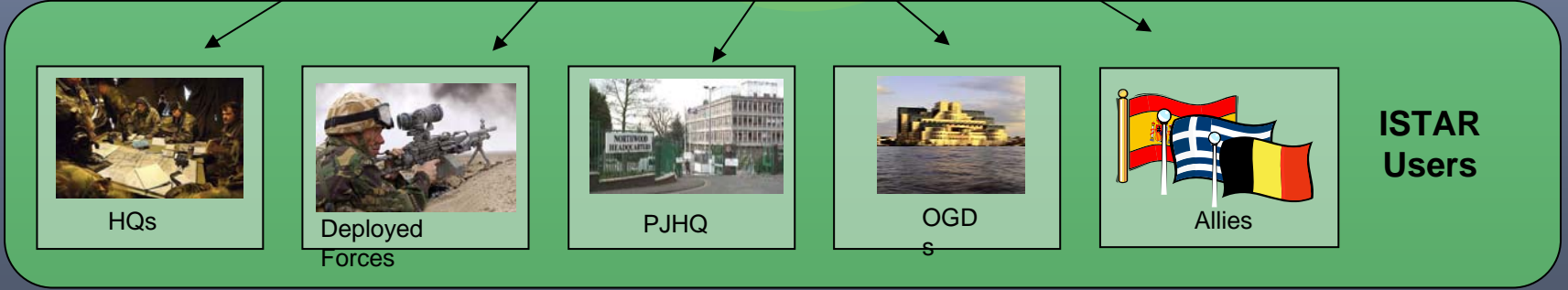
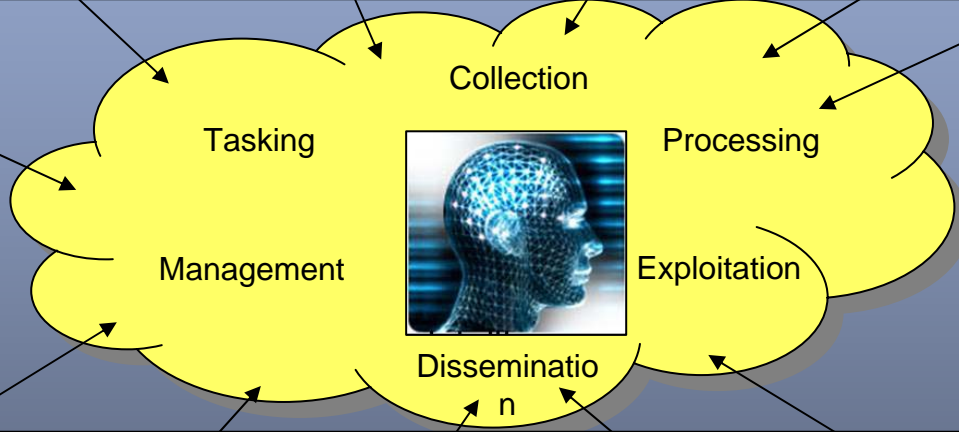
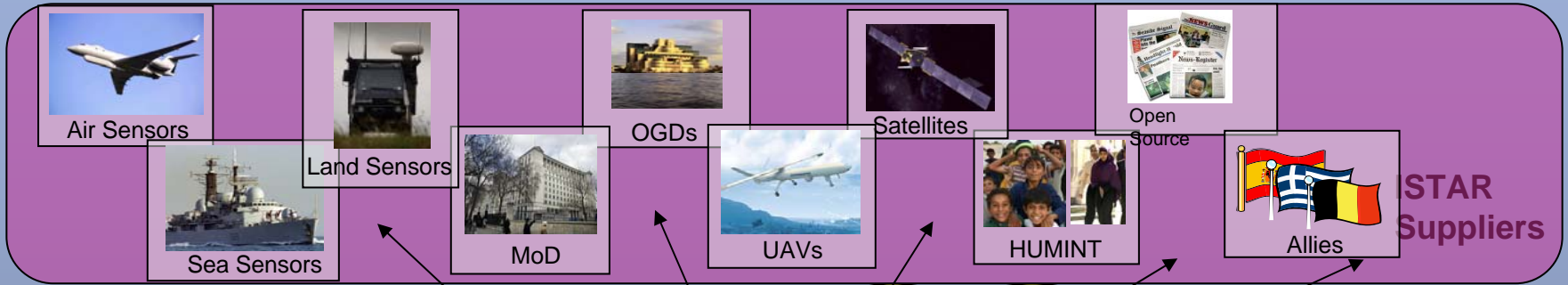


 **ROYAL
AIR FORCE**

UCAS

ISR – More Than Collect

- Defence requires an effective and efficient end-to-end ISTAR service in order to provide actionable information and intelligence to inform Decision Makers
- SOLOMON



Lessons Identified

Lessons Identified - People

- Performing persistent ISR requires significant manpower resources, but:
 - RPAS offer the most efficient way to deliver persistence from an aircraft
 - SATCOM
- Over the horizon BLOS operations reduces in theatre footprint and associated logistic, life support and FP requirements
- Overseas basing: return of personnel
 - Increased trg burden vs cost of relocation to UK
- Manning the force in peacetime

Lessons Identified - Operations

- **22350+hrs ISR : 170 weapons released**
 - Fatigue life of aircraft: F3 OSD 5000hrs/25 yrs; UK Reaper 8500hrs/3 yrs
 - Weapon carriage life; Persistent armed capabilities (RPAS) vs costs in weapons through life
 - 2 in 3 weapons released are HF; growing emphasis on minimal risk of collateral damage
- **> 95% airframe and sensor reliability; better than traditional traditional ISR or combat aircraft**

Lessons Identified - Safety

- Safety: A Case For Automatic Take Off and Landing

PREDATOR (all types and nations) CLASS A MISHAP RATE

< 0.8/10,000fg hrs (over 1million hrs)

UK/US Reaper CAT 4/5 ACCIDENT RATE

<1.10/10,000 fg hrs (over 120,000 hrs)

UK H450 CAT 4/5 ACCIDENT RATE

<1.10/10,000 fg hrs (over 35000 hrs)

UK FJ CAT 4/5 ACCIDENT RATES

GR7/9 0.97/10,000fg hrs

GR1/4 0.59/10,000fg hrs

F3 0.28/10,000fg hrs

Lessons Identified - Training

- Future RPAS crews will need to be equally skilled and professional as today's aircrew; but can be trained differently
 - Early trials suggest training costs could be reduced by 80%
- **Sensor Operator**
 - Currently both Officers and SNCO's
 - WSO/WSOp or IA?

Lessons Identified – Public Opinion

- The importance of a Communication Strategy

Communication Strategy

- Stress the 'equivalence' of RPAS to traditional Combat Aircraft
 - Piloted
 - Law Of Armed Conflict / Rules of Engagement
 - Dislocation from the battlefield
 - 'Playstation' Mentality to Warfare
 - Human-in-the-loop assisted by automation

QUESTIONS?