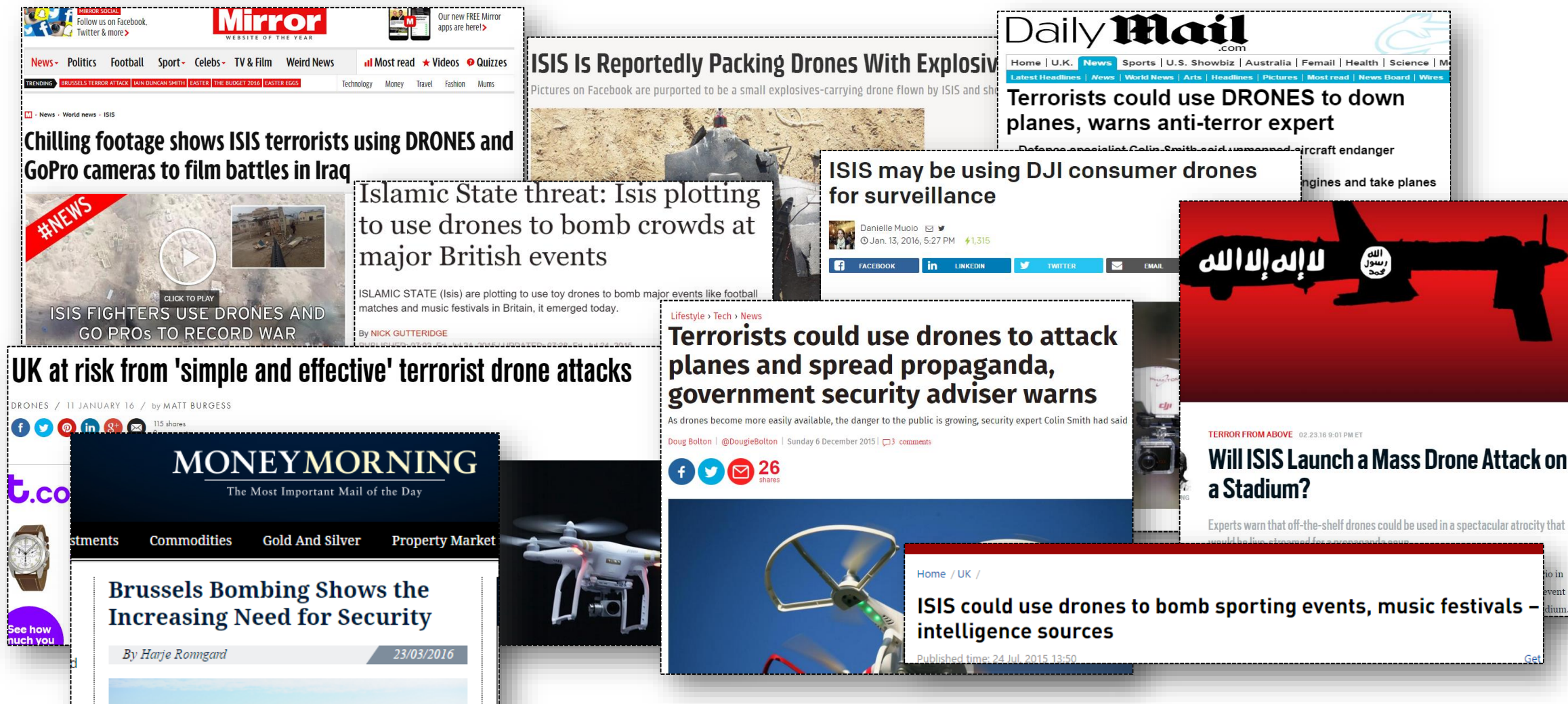# department 13

MESMER - Counter Drone System

Investor Presentation

4 JULY 2016

D13 Developing a Novel Drone Defense System

- Department 13 is a specialized communications Company that operates in the unlicensed frequency space such as the ISM (Industrial Scientific Medical) band—globally used for Wi Fi, Bluetooth, Z-Wave, etc. It is also used for drones and IED's.

- Department 13 developed protocol manipulation software capable of operating in the drone defense industry, cyber security, Radio Frequency (RF) tracking applications, software communications and networking.

Terrorist Drone Threat Unfortunate Reality

Mirror

ISIS Is Reportedly Packing Drones With Explosiv[...]

Pictures on Facebook are purported to be a small explosives-carrying drone flown by ISIS and sh[...]

Chilling footage shows ISIS terrorists using DRONES and GoPro cameras to film battles in Iraq

Daily Mail.com

Terrorists could use DRONES to down planes, warns anti-terror expert

ISIS may be using DJI consumer drones for surveillance

Danielle Muoio

Jan. 13, 2016, 5:27 PM

Islamic State threat: Isis plotting to use drones to bomb crowds at major British events

ISLAMIC STATE (Isis) are plotting to use toy drones to bomb major events like football matches and music festivals in Britain, it emerged today.

By NICK GUTTERIDGE

UK at risk from 'simple and effective' terrorist drone attacks

DRONES / 11 JANUARY 16 / by MATT BURGESS

115 shares

Lifestyle › Tech › News

Terrorists could use drones to attack planes and spread propaganda, government security adviser warns

As drones become more easily available, the danger to the public is growing, security expert Colin Smith had said

Doug Bolton | @DougieBolton | Sunday 6 December 2015 | 3 comments

26 shares

MONEYMORNING
The Most Important Mail of the Day

Investments   Commodities   Gold And Silver   Property Market

TERROR FROM ABOVE   02.23.16 9:01 PM ET

Will ISIS Launch a Mass Drone Attack on a Stadium?

Experts warn that off-the-shelf drones could be used in a spectacular atrocity that [...]

Brussels Bombing Shows the Increasing Need for Security

By Harje Ronngard   23/03/2016

Home / UK /

ISIS could use drones to bomb sporting events, music festivals – intelligence sources

Published time: 24 Jul, 2015 13:50

Drone Market Key Statistics

$20.6Bn

Global Market for
Commercial Drone Sales

$14.5Bn

Global Market for
Consumer Drones Sales

$70.1Bn

Global Market for Military
Drone Sales

$2.7Bn

Global Market for
Civil Drone Sales

$2.8Bn

NASA UAV airspace
management system
budget

$100Bn

Estimated Five Year Global
Drone Market Total
Spending

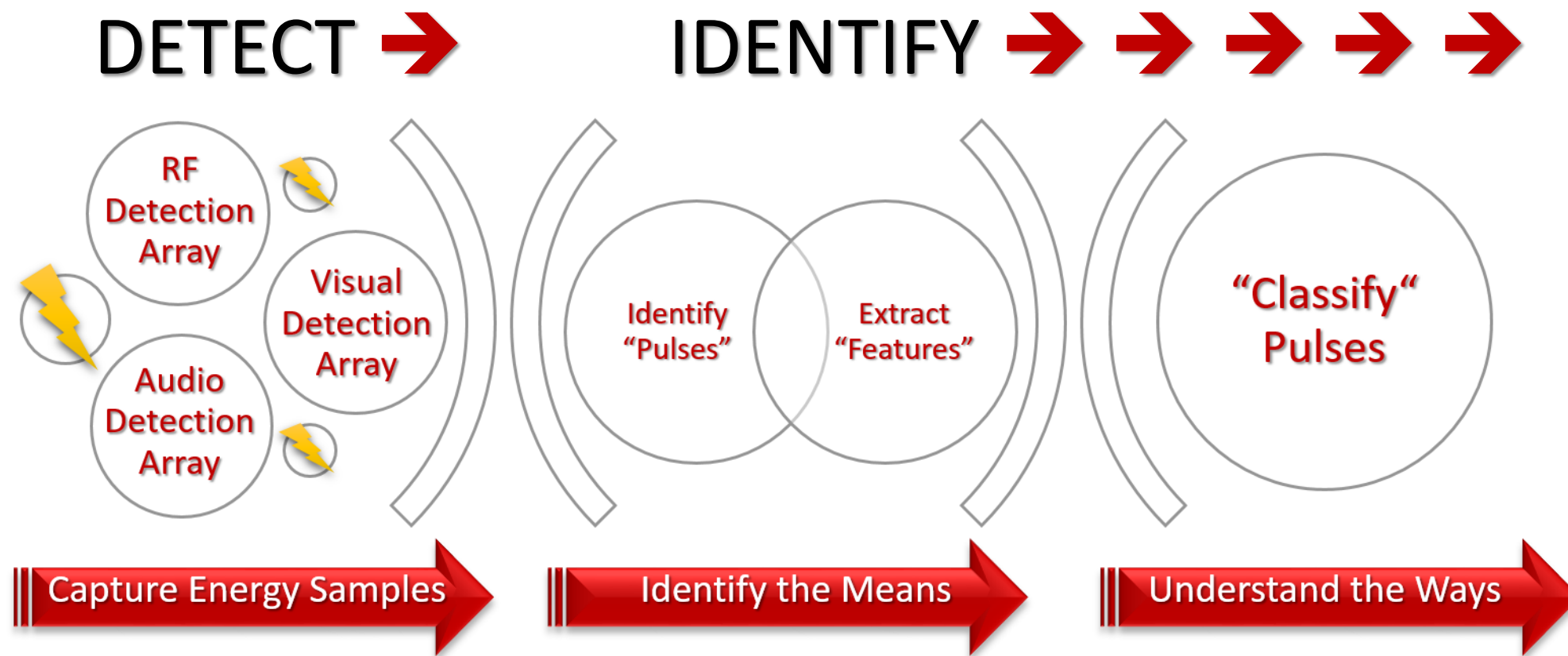Source: Goldman Sachs Global Investment Research, Equity Research March 13, 2016

Attractive Market Potential

- Drones are one of the quickest growing technology sectors. This is driven by miniaturization and stronger computer technology. The market for drones is expected to reach $100B by the year 2020. Drone utilization is increasing in the Military, Commercial, Peace Keepers and Consumer sectors.

- In addition to technological challenges, drone mitigation is limited by FAA and property laws.   It is illegal to signal jam or to shoot down drones in most of the US; therefore, mitigation capabilities are limited. The Drone Defense industry is expected to reach $1.14B by 2022

Department 13 Advantages

- D13: a diverse team of former military operators, scientists & engineers applying innovative technology for unmet needs in a fast evolving world

- High Level Strategy – To develop transformative technology for Defence and Commercial markets

- Immediate strategy to roll out our innovative Drone Defence technology to the Market

- Technology to address new challenges

- **D13 controls significant IP in wireless and networking relevant to Commercial and Defence sectors**

Three major areas:
Electronic Warfare
Wireless Systems
Mobile Devices

Path to Market Share Domination

DETECT ➡ IDENTIFY ➡ ➡ ➡ ➡ ➡

RF Detection Array

Visual Detection Array

Audio Detection Array

Identify "Pulses"

Extract "Features"

"Classify" Pulses

Capture Energy Samples ➡

Identify the Means ➡

Understand the Ways ➡

MESMER Offers Multiple Mitigation Modalities

MITIGATE ➜ **MESMER's Comprehensive & Adaptive MITIGATION Ends**

Directed or Automatic Mitigation

- **Capture Actions**
  - Kill Power Command
  - Hover Command
  - Safe Landing Command
  - Flight Path Record

- **Seize Control Actions**
  - User Controlled Flight
  - Auto Flight Path to Secure LZ
  - Surreptitious Tap of Sensors

- **Adaptive Mitigation Profiling**

Targets Only Devices that Penetrate Geographic Bubble

Outer-Layer Detects Drone and Identifies Viable Mitigations

Mid-Layer Actions Selected Viable Mitigations (Take Control & Fly to Safe Area)

Detect Drone/UAS

Inner-Layer Deny Comms and/or Auto Kill Power Command

C-O-T-S Drone operating on ISML Band

Deny Communications with Drone
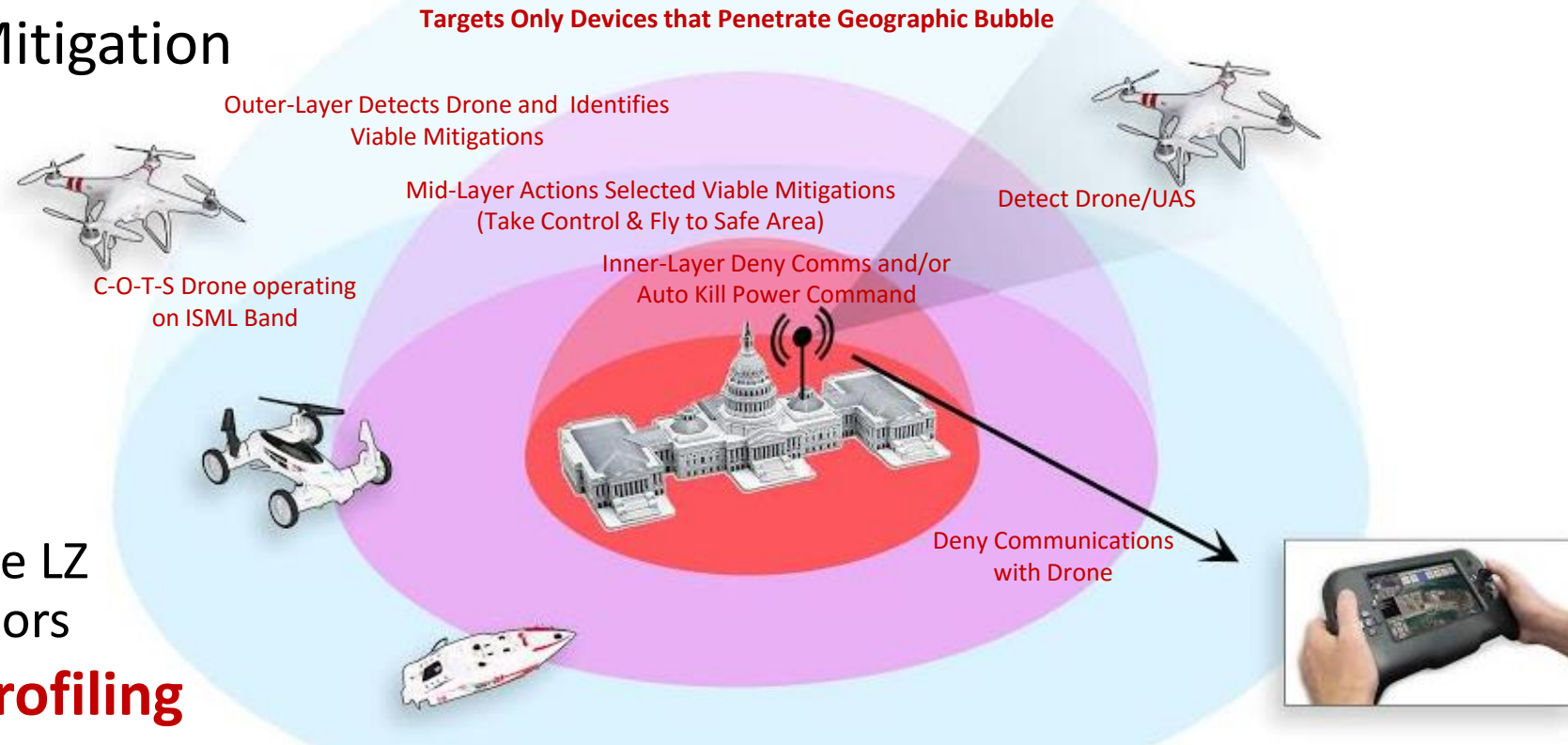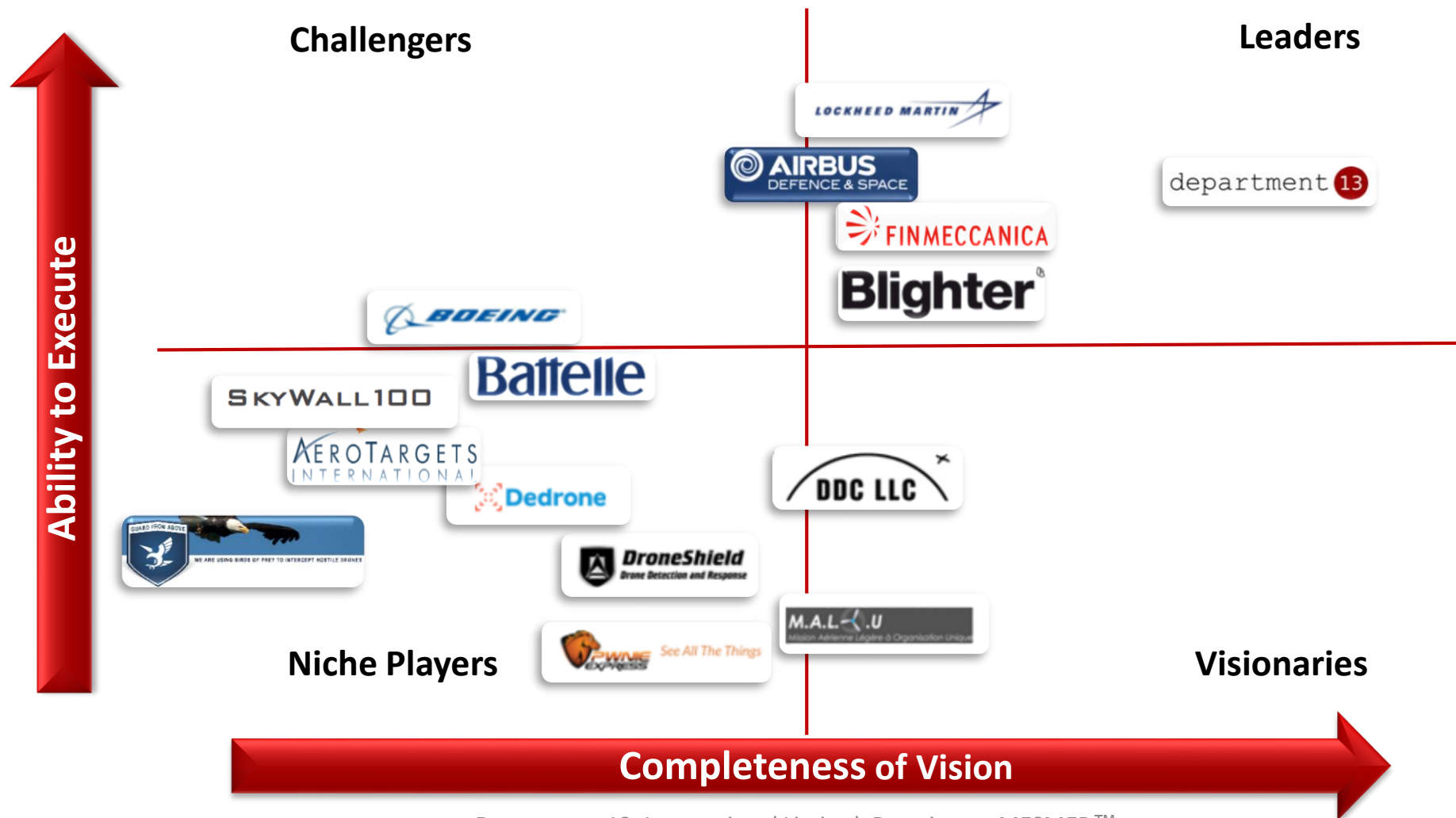
MESMER Business Model and Revenues

Government Sponsored Research & Development	• **Department of Defense** • **National Laboratories** • **Other Government Agencies**
Commercial Property Protection	• **Real Estate** • **Stadiums** • **Theme Parks**
Government Facility & Force Protection	• **Utilities Infrastructure** • **Military Facilities** • **Government Buildings**
Public Safety Protection	• **Federal Aviation Admin/NASA** • **Police/Fire/Customs** • **Coast Guard/Air Medivac**
Private Citizens	• **Celebrities/Politicians** • **High Net Worth Individuals**

Business model is sale of software licenses on an annual fee basis with associated training income.

Initially Development Licenses in each industry to build out use cases *(Features and Operational Parameters for Each MESMER System)*

2016
Defense Department and US Government Agency grants, Development License revenues. Early adopter developers

2017
Mesmer tailored products hardware and software to use application and product specifications/features.

MESMER™ Product Maturity Timeline

❶ Live Drone takeover demonstration to US Government Agencies, Intelligence Community & Large Commercial Partners
**(JUN2015, JAN2016, MAR2016)**

❷ Black Dart Demonstrations for US Dept of Defense

❸ MESMER v1
- Software based solution running on Linux SDR platform
- Detect, Identify, Mitigate DJI and Wi-Fi enabled drones (limited models)
- Single node, defined area of influence
- Integration points for additional sensors

❹ MESMER v1.5
- Software upgrade to enhance detection/ID incorporating feature extraction, expand mitigation capabilities and number of drone families/models
- Enhanced perimeter definition incorporating 3rd party sensors
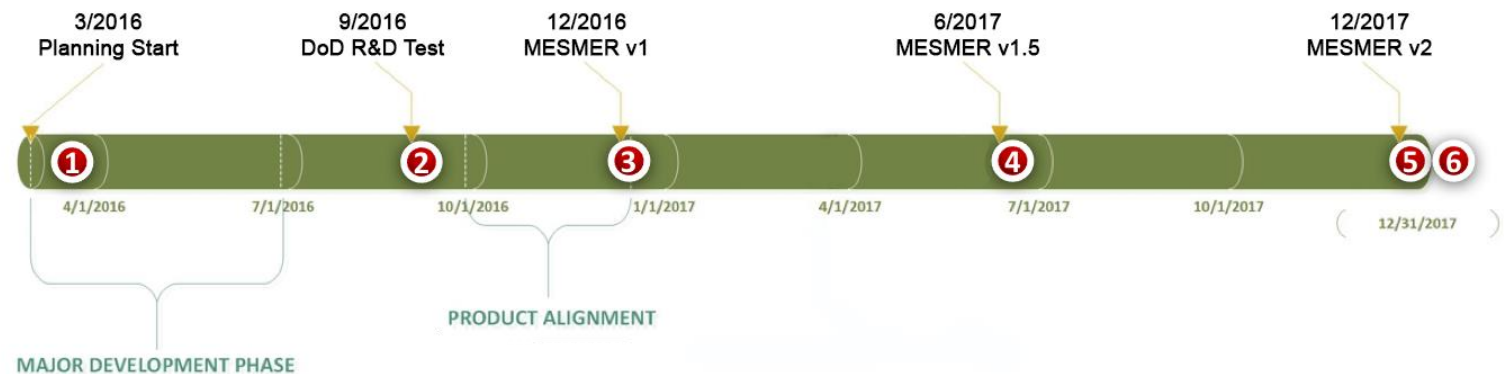
❺ MESMER v2
- Multi-node/Cooperative operation
- Platform enhancements for rapidly scaling capability

❻ MESMER v3
- Blind Signal Analysis driving mitigation
- Virtual antenna array

Timeline:

3/2016 Planning Start	9/2016 DoD R&D Test	12/2016 MESMER v1	6/2017 MESMER v1.5	12/2017 MESMER v2
❶	❷	❸	❹	❺ ❻
4/1/2016 7/1/2016	10/1/2016 1/1/2017		4/1/2017 7/1/2017	10/1/2017 12/31/2017

PRODUCT ALIGNMENT

MAJOR DEVELOPMENT PHASE

Strategic Partners Validate the Technology

Booz | Allen | Hamilton

Department 13 eyes alliance with Booz Allen Hamilton for U.S. defence opportunities

Department 13 International Ltd (ASX:D13), a technology company focused on wireless and mobile technologies has established a strategic relationship with Booz Allen Hamilton (NYSE:BAH).

Mar 29th 2016

Strategic Innovation
Inspiring a relentless pursuit of original value

Prime Defense Contractor and Systems integrator with US Navy and Marines

EPE
Trusted to Protect

Department 13 appoints EPE as distributor

January 20, 2016 10:33am

Supplier of Counter-Terrorism equipment to Australian and NZ Defense Forces and Law Enforcement

IMSL: The Intelligence People
Every organisation has a requirement for intelligence in some form, even if you don't always realise it.

IMSL Appointed as Regional Distributor in UK and Europe for Department 13 Counter-Drone Solution

Posted on: 8 February 2016

WHERE WE ARE BASED

Drone Threat Intelligence experts advising Defense, Government Agencies and commercial businesses in Europe and around the world

BoD Have Deep Industry Experience

Jonathan Hunter – **Chairman and CEO**

- Over 25 years experience in leadership positions within the US Military and Government Advisory Committees.
- Former Advisor to the National Academy of Science on defense technology applications.
- BS in Criminal Justice and MBA in Technology Management

Dr. Kathleen Kiernan – **Executive Director**

- Former Assistant Director ATF, 29 year veteran of Law Enforcement. Member of the US Army Science Board, member US Air Force Strategic Studies Board, Member IBM Network Science Research Center.
- PhD in Education from Northern Illinois University, MS in Strategic Intelligence from the Joint Military Intelligence College in Washington D.C. and MA in International Transactions from George Mason University Homeland Security Policy Institute.
- Recipient of Women of Influence – Public Sector Award in 2010

Al Teller– **Executive Director**

- Former Chairman and CEO of the MCA Music Entertainment Group and CBS Records Music Entertainment
- Two BS in Engineering degrees from Columbia University and MBA from Harvard Business School.
- President Bill Clinton's appointee to National Information Infrastructure (NII) Advisory Council.

Phil George – **Non-Executive Board Member**

- Specialist in Information Security and Risk Management, currently operates a global cloud telecom, specializing in high quality, secure voice solutions.
- Launched Uber Perth in Australia in 2014 as Operations Manager.

Gavin Rezos – **Non-Executive Board Member**

- Extensive international investment banking experience holding CEO positions in companies in Australia, the UK, US & Singapore.
- Non Executive Director of Iluka Resources Limited , Metalysis Plc and Chairman of Alexium International.
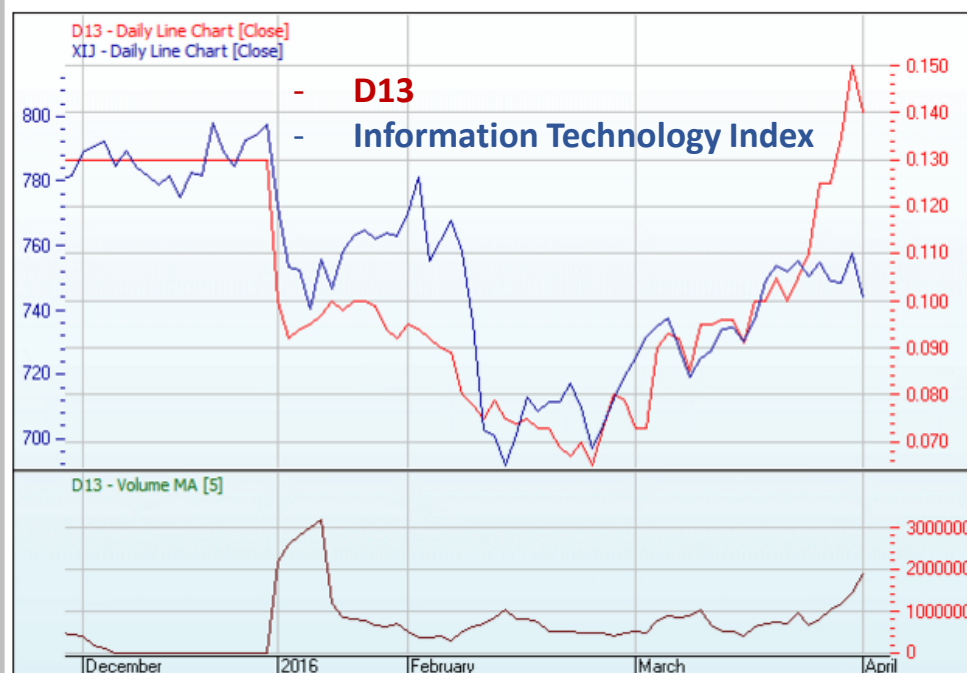
D13 Corporate Profile

Capital Structure

D13, DEPARTMENT 13 INTERNATIONAL ORD

The chart of daily prices over 3 months for security D13

- **D13**
- **Information Technology Index**

Tradeable Shares
114,403,500
Escrowed Shares
301,00,000
Perf Shares
284,000,000
Options
42,100,000

Research Report:
DJ Carmichael:
Speculative **BUY**

Department 13, International Limited, Proprietary, MESMER™   **14**

Top Shareholders

(Including Escrowed Shares As of 01APR16)

Holder	Shares Held	% IC
JONATHAN ANDREW HUNTER	40,000,000	9.63
ROBI SEN	40,000,000	9.63
ROGER CHARLES DAVIES	30,800,000	7.41
PAUL MCCARTHY	30,000,000	7.22
BRYAN HALFPAP	20,000,000	4.81
STEVEN J SHATTIL	20,000,000	4.81
BEN SMITH	20,000,000	4.81
MRS GEORGIA SUSAN CLARK <LUCY AMELIA CLARK A/C>	14,625,000	3.52
MRS GEORGIA SUSAN CLARK <ELLIOTT LEWIS CLARK A/C>	14,625,000	3.52
JOANNE ELLEN REZOS	13,000,000	3.13
BAYARD WILLIAM JOHN REZOS	10,000,000	2.41
NATIONAL NOMINEES LIMITED	7,499,885	1.81
GAVIN JOHN REZOS	6,250,000	1.50
J P MORGAN NOMINEES AUSTRALIA LTD	5,993,467	1.44
PHEAKES PTY LTD	3,250,000	0.78
AYMON PACIFIC PTY LTD	3,075,000	0.74
PHEAKES PTY LTD	3,000,000	0.72
MR ROBERT PAUL MARTIN & MRS SUSAN PAMELA MARTIN	3,000,000	0.72
GOLDBONDSUPER PTY LTD	3,000,000	0.72
METIS PTY LTD	2,800,000	0.67

Milestones Attained

27-APR-2016 New US Patent for coordinated routing direct application to drone defense, efficient cloud storage and streaming media

20-APR-2016 US Department of Defense Awards $432K for Counter-Drone Technology

04-APR-2016 D13 invited to attend DoD "Black Dart" C-UAS evaluation

28-MAR-2016 D13 creates a strategic relationship with Booz Allen Hamilton

02-MAR-2016 Key Appointments to Counter-Drone Commercial Team

29-FEB-2016 New US Patent for Cooperative Subspace Coding

10-FEB-2016 Aiming To Have Counter Drone Products in Production for 2016

04-FEB-2016 EPE appointed as Australian Regional Distribution Partner

20-JAN-2016 ISML appointed distributor in UK Europe