

D13 presents at Goldman Sachs TechNet Conference in Hong Kong

PERTH, WA and COLUMBIA, MD USA – DEPARTMENT 13 INTERNATIONAL LTD (ASX : D13) (“Department 13”, “D13” or “the Company”), a cutting edge developer of counter drone technology, is pleased to advise that D13’s Chairman and CEO, Mr Jonathan Hunter, is presenting at the Goldman Sachs TechNet Asia Pacific 2017 Conference. The event will take place in Hong Kong on 23 and 24 May 2017.

Enclosed is the Investor Presentation to be used at the conference.

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About Department 13

Department 13 (D13) was founded in Virginia in 2010 by a team of former military operators, scientists and engineers who apply proprietary innovative advanced technology to emerging requirements. D13 is developing cutting-edge software and communication systems that have the potential to transform the networking and communication fields as well as current applications in drone defense, mobile phone IT security and secure enhanced Android phone systems. D13 is engaged with multiple counter UAS projects to provide strategic solutions for civil, military and commercial security requirements. D13 has 14 patents and 23 patent applications in the development of wireless protocol manipulation and communication networking software with applications in drone defense, local area and wide area cellular communications and networking, enhanced data bandwidth for all digital communications, cyber security for mobile devices and sophisticated RF technology applications (radiometrics). For more information about D13, please visit www.department13.com or follow us on Twitter (@D13ASX), LinkedIn and YouTube.



department **13**

ASX: D13

INVESTOR PRESENTATION MAY 2017

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EXECUTIVE SUMMARY

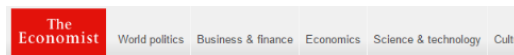
- ASX:D13 Listed January 2016 Au\$74m Market Cap
- **MESMER:** Software based counter drone solution for Government and Commercial Sectors
- **Counter Unmanned Aircraft System (C-UAS) Validation**
 - Black Dart – US DoD Test and Evaluation event, September 2016
 - MITRE C-UAS Challenge Finalist, August 2016
 - Black Dart - US DoD Test and Evaluation event, May 2017
- **Contracts include: \$2.8 million revenue since inception**
 - US Government Agencies
 - US DoD Agencies
 - US Research Lab
 - Awarded contract to deliver advanced C-UAS Capability US DoD
- **Growing Sales Pipeline and Strategic Partnerships**
 - Booz Allen Hamilton (BAH) licensed MESMER
 - 1st Sale to EPE Australian Channel Partner
- **Highly experienced senior management team to execute growth strategy:** US DoD, large research institutions and seasoned commercial team selling into target markets

D13 invited to the White House to Talk Drone Tech



Published on: Aug 3, 2016 | by finfeed

Chief Technology Officer of Department 13 (ASX:D13) Rob Sen was invited by the United States White House Office of Science and Technology to participate in a working group focused on both the near and long-term implications of unmanned aircraft systems (UAS) as an emergent technology.



Drone countermeasures Hacked off

Guarding against rogue drones could be a legal nightmare

May 28th 2016 | From the print edition



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COMPANY HIGHLIGHTS

Transformative Defense Solution

- Software solution enables automated detection and mitigation strategies to stop, redirect, land or take control of drones
- Software can be ported or integrated to 3rd party hardware or systems

Adaptive Threat Protection

- Software based approach enables D13 to easily update system enabling MESMER to stay ahead of its competitors' product offerings
- US Department of Commerce classified MESMER as Dual-Use and Non-Jamming

Strong Intellectual Property

- Issued Patents in communication, detection, tracking, and security methodologies totaling 13 granted patents with 22 pending patents
- Foundational patents in key communication and networking families

Best-In-Class Team

- D13's management is an experienced team with U.S. military, government, and commercial backgrounds
- 50% of staff are PhD and Graduate level software engineers and radio frequency communications experts

AGENDA





I. MARKET OVERVIEW

DRONE MARKET KEY STATISTICS

\$100Bn

Estimated Five-Year Global
Drone Market Total
Spending

\$14.5Bn

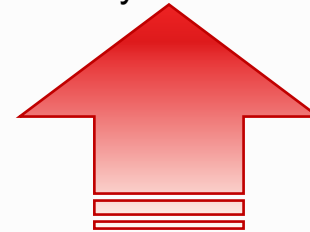
Global Market for
Consumer Drone Sales

\$20.6Bn

Global Market for
Commercial Drone
Sales

\$1.14Bn

Drone Defense Market
by 2022

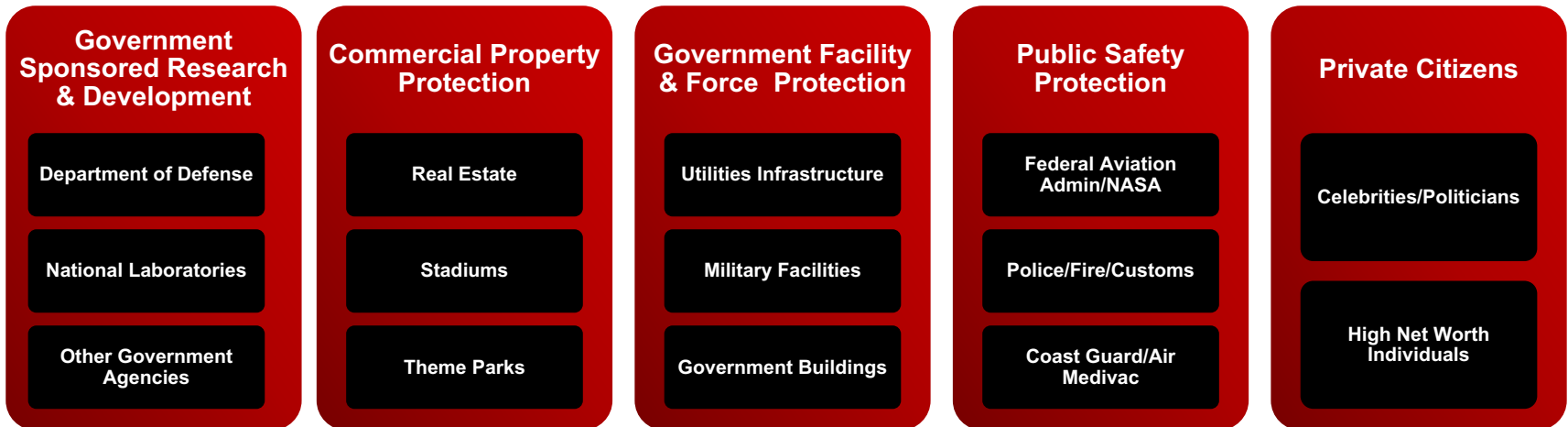


23.89%

Drone Defense CAGR
2017 - 2022

Figures in US Dollars
Goldman Sachs Global Investment Research, Equity Research March 13, 2016
<http://blog.executivebiz.com/2016/03/reportlinker-global-anti-drone-market-to-reach-1-14b-by-2022/>

MESMER TARGET CUSTOMERS



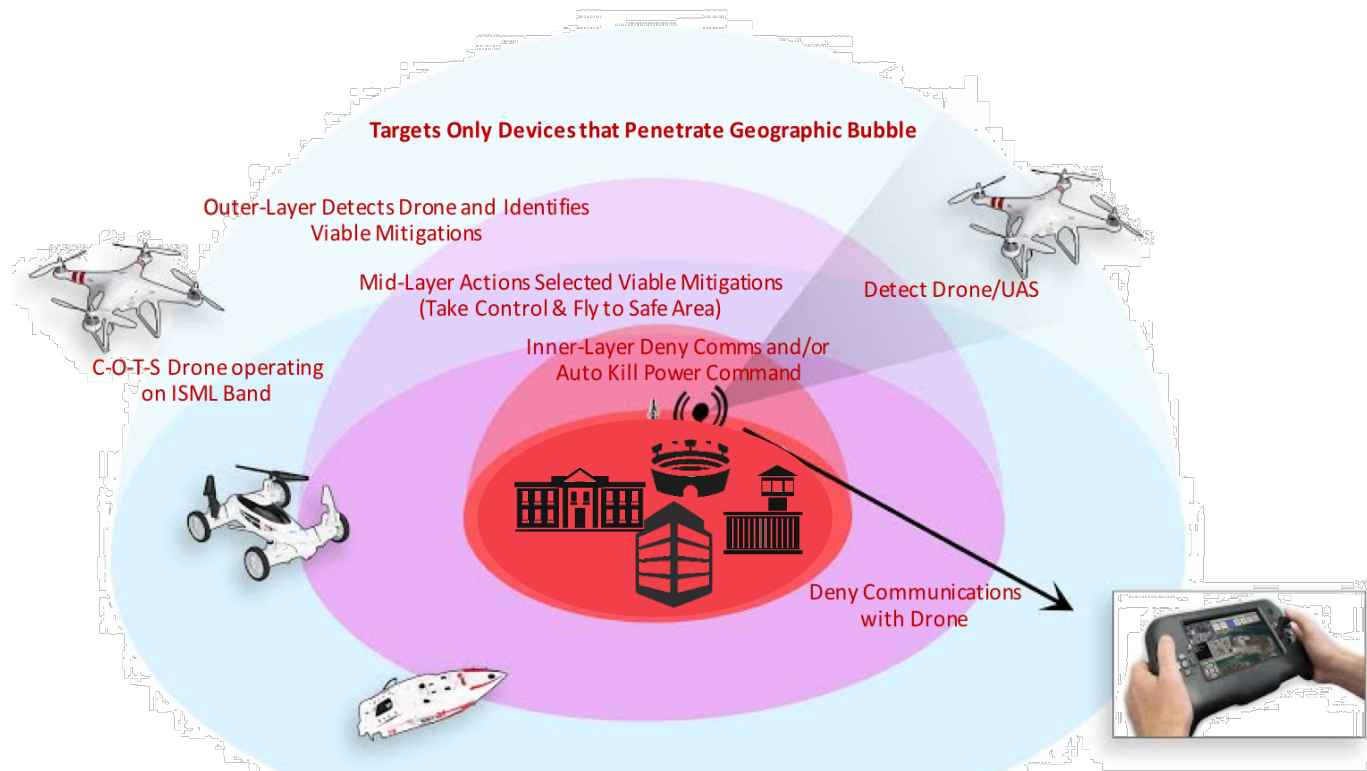
High value targets like amusement parks, stadiums and sport facilities will be looking to secure their airspace with a drone mitigation solution.



II. PRODUCT OVERVIEW

MESMER SOLUTION

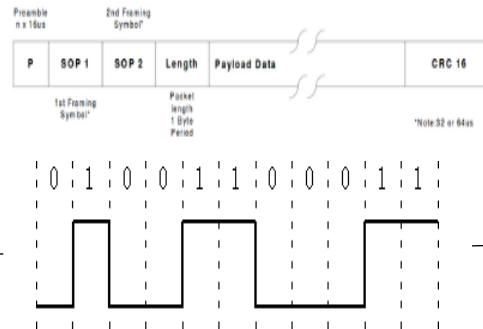
- **MESMER Detects, Identifies, and Mitigates Drone threats**
- Mesmer **identifies and takes control of commercial drones**, MESMER **lands drones safely**, user controls the outcome with the drone
- **Flexible software** solution so easily adapted to solve unforeseen issues or threats
- **Does not effect other communications. Targets specific drones, not radio frequency band**



MESMER PROCESS OF PROTOCOL MANIPULATION



DETECT
MESMER
passively
listens for
drone signals



IDENTIFY
MESMER uses signal
analysis



MITIGATE
MESMER takes
advantage of
protocol to stop,
redirect, land or take
control of drones

MESMER™ TECHNOLOGY VALIDATION

MITRE Challenge

August 2016 – Global Counter Drone Evaluation, D13 finalist

Black Dart

September 2016 - D13 was invited by US Dept. of Defense to showcase MESMER

Commercial Licenses

Q1 2017 - Booz Allen Hamilton (BAH) procures 1st MESMER commercial license

Demonstrations

Q1 2017 - D13 hosted a live demonstration events in Australia, New Zealand, and United States

Product Release

Q1 2017 - Mesmer Version 1 full commercial product launch

COMPETING TECHNOLOGY

The use of protocol manipulation has competitive advantages over other systems such as frequency jammers and kinetic attacks because you control the outcome with only the intended Drone.

Competing technologies such as jamming, electronic warfare (EW) and kinetic approaches are largely inflexible, and are not an acceptable approach in the commercial markets.

Frequency Jammers

- Block all signals and disrupt communications between control systems and drone(s)
- Frequency jammers can cause drone(s) to uncontrollably crash
- Jammers can also disrupt other commercial functions like Wi-Fi and Bluetooth
- Illegal to Jam RF Signals in most countries

Kinetic Attacks

- Kinetic and energy weapons may be illegal or sub-optimal
- Destroying a drone in flight may complete the mission by causing the intended effects

It is currently illegal, according to the US Communications Act, to sell or operate signal jammers outside of approvals for limited government agency use



III. STRATEGY

MESMER™ MILESTONES ACHIEVED

Q1 FY16



Demo of Software

- ❖ US DoD Agencies
- ❖ Intelligence Agencies
- ❖ Commercial Partners (JUN2015, DEC 15, JAN2016, MAR2016)

Q3 FY16



MESMER Validation

- ❖ MITRE Challenge C-UAS Finalist (Aug 2016)
- ❖ Black Dart, US DoD Test and Evaluation event (SEP 2016)

Q1 FY17



MESMER v1

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

Q1 FY17



MESMER v1 +

- ❖ Licensed Demonstration Software to Booz Allen Hamilton (BAH)
- ❖ 1st MESMER System Sale
- ❖ Increased system capabilities
- ❖ Demonstrations of V1 in Australia, New Zealand, US and international countries
- ❖ Planned Upgrade v1.5

MESMER™ UPCOMING MILESTONES

Q3 FY17



MESMER v1.5

- ❖ Software upgrade to enhance detection
- ❖ Enhanced perimeter
- ❖ Additional Protocol Mitigations
- ❖ Multi-node, Cooperative operation of MESMER systems

Q1 FY18



MESMER v1.5 a

- ❖ 3rd party platform integration
- ❖ Add additional sensors to enhance overall capabilities
- ❖ Increase capabilities and use cases such as man-portable, fix site, and mobile offerings
- ❖ Modular base componentry

Q3 FY18



MESMER v2.0

- ❖ Platform enhancements for rapidly scaling capability
- ❖ Blind Signals Detections - ID incorporating feature extraction, expand mitigation capabilities and number of drone families/models
- ❖ Include additional non drone threats
- ❖ Increase Swarm Capabilities

Q1 FY20



MESMER v3.0

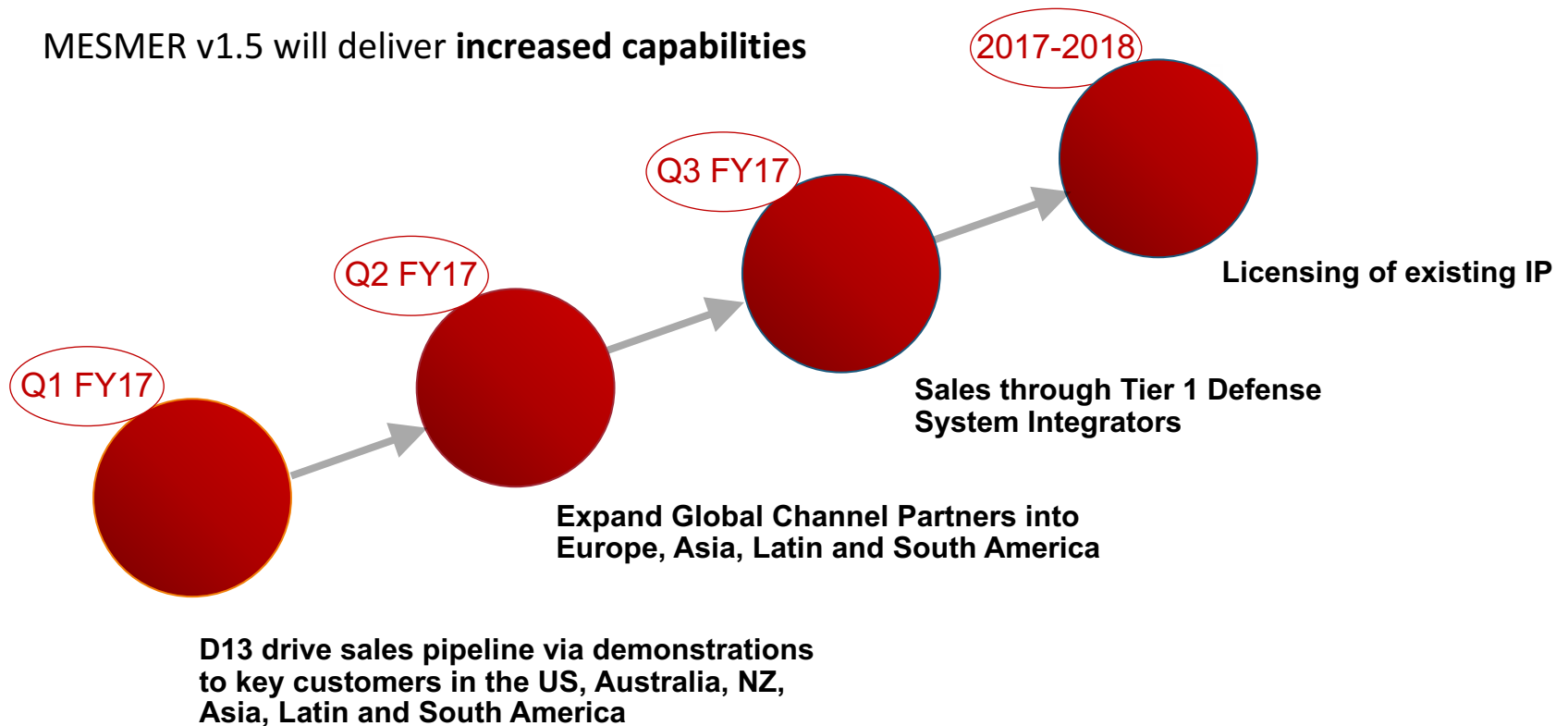
- ❖ Blind Signal Analysis driving mitigation
- ❖ Virtual antenna array
- ❖ C MIMO Beam Forming RF Control
- ❖ Advanced Swarm Capabilities

GO TO MARKET STRATEGY

Product is the **MESMER Software**

Only mitigation Solution that is **Dual Use and Non Jamming**

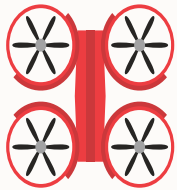
MESMER v1.5 will deliver **increased capabilities**



*MESMER software integrates easily to 3rd party platforms and is open to additional sensors

PRODUCT PORTFOLIO PIPELINE

Drone Defense



Mesmer – D

Drone Defense System

Mesmer – WAT

Wireless attack toolkit for
penetration testing and
CEMA

Cyber Security



LPI/LPD

Military and Intelligence

Commercial use cases
for spectrum sharing and
reuse

Deckard

Secure Enhanced Android
based ecosystem for
mobile devices

Communication Networking



C-MIMO

Sub Space Coding
Random Linear Network
Coding

Cyber Security



RF Feature Characterization

Tracking Technologies and
Counter RF Monitoring



IV. EXECUTIVE TEAM

MANAGEMENT TEAM

Chief Executive Officer

Jonathan Hunter



- 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 Technology Management

Chief Operating Officer

Stylianos Kaminaris



- Former Director of Cyber Product Development at Battelle Memorial Institute.
- Matured products from concept to market
- Embedded cybersecurity, counter-IED systems, wireless middleware and high-assurance secure communication.

Chief Technology Officer

Robi Sen



- 25-year career in IT, engineering and research in cutting-edge technology for the DoD.
- 15 years experience in executive and senior management.
- Author and co-author of numerous technical books, including three books on Google's Android

Chief Science Officer

Steve Shattil



- Inventor radio MIMO system, technology used today in most wireless and cellular standards. Other patents include 3GPP (3G cellular) and LTE (4G cellular).
- Dozens of other U.S. and foreign patents essential to wireless and radio protocols standards.

BOARD OF DIRECTORS

Chairman



Jonathan Hunter

- 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 Technology Management

Executive Director



Al Teller

- Former CEO & Chairman, MCA (now Universal) Music Entertainment Group; President, CBS (now Sony) Records & Columbia Records
- President Bill Clinton's appointee to the National Information Infrastructure Advisory Council
- BS Electronics Engineering & MS in Operations Research from Columbia University; MBA from Harvard Business School

Executive Director



Kathleen Kiernan, Ph.D

- Former Assistant Director of ATF and 29 year veteran of law enforcement
- Ed.D in Education from Northern Illinois University, MS in Strategic Intelligence from the Joint Military Intelligence College, MA in International Transactions from GMU. Adjunct Faculty: Johns Hopkins and Naval Postgraduate

Non-Executive Director



Gavin Rezos

- International investment banking experience and previous CEO and Director positions in technology companies in Australia, the UK, US & Singapore.
- Chairman of Alexium International Group and formerly a Non Executive Director of Iluka Resources Limited, Metalys Plc and Rowing Australia

Non-Executive Director



Phil George

- 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.

Non-Executive Director



Tim Davies

- Associate Director with Goldman Sachs and Senior Portfolio Manager Consolidated Press Holdings, Ellerston Capital and Caledonia Investments, focused on listed companies on Chinese and Asian equity markets.
- Currently Chairman and CEO of non-profit Bright Hospitality Ltd, in Sydney.



V. INTELLECTUAL PROPERTY PORTFOLIO

PATENT PORTFOLIO DISCUSSION

D13 owns and/or has exclusive licenses 14 patents granted and 24 patents pending for essential patents in current 4G cellular and wireless standards and foundational patents for next-generation (5G) cellular and future wireless. These technologies include the following:

1. Protocol Manipulation
2. Identification and Classification
3. Distributed Software Defined Radio (SDR)
4. Tactical Network Dominance
5. Blue Sphere
6. LP/LPD Communications
7. Radio Resource Sharing and Parasitic Networks
8. Cooperative- Multiple Input Multiple Output (C-MIMO)
9. Cooperative Subspace Coding (CSC)
10. Single Carrier FDMA (SC-FDMA)
11. Coordinated Multipoint
12. Cloud Radio Access Network (C-RAN)
13. Airborne Relays

Based on the early filing dates of broad patents that are essential for today's radio networks, D13 has expanded their IP to cover signal analysis and electronic countermeasures that will be essential for the C-UAS market.

PATENT PORTFOLIO

ISSUED PATENTS

Title	Serial Number	Filing Date	Patent No.	Grant Date
Distributed Wireless Communications for Tactical Network Dominance	12/103.983	16-Apr-08	8254847	28-Apr-12
LPI/LPD Communication Systems	13/757,032	1-Feb-13	8929550	6-Jan-15
Sharing Resources Between Wireless Networks	14/498,499	26-Sep-14	9473226	18-Oct-16
Cooperative Beamforming in Wireless Networks	11187107	22-Jul-05	8670390	11-Mar-14
Cooperative Wireless Networks	12545572	21-Aug-09	8750264	10-Jun-14
Cooperative Wireless Networks	14276309	13-May-14	9048897	2-Jun-15
Cooperative Wireless Networks	14275161	12-May-14	9042333	26-May-15
Cooperative Wireless Networks	14511585	10-Oct-14	9136931	15-Sep-15
Cooperative Subspace Multiplexing in Comm Nets	14164253	26-Jan-14	9225471	29-Dec-15
Cooperative Subspace Demultiplexing in Comm Nets	14164254	27-Jan-14	9270421	23-Feb-16
Cooperative Subspace Multiplexing in CDNs	14168442	30-Jan-14	8942082	27-Jan-15
Pre-Coding in Multi-User MIMO	14967633	14-Dec-15	9485063	1-Nov-16
Content Delivery in Wireless Wide Area Networks	13647686	9-Oct-12	9325805	26-Apr-16
Spreading and Precoding in OFDM	15149382	9-May-16	9628231	18-Apr-17

PATENT PORTFOLIO

PENDING

Title	Serial Number	Filing Date	Pub No.
Sharing Resources Between Wireless Networks	15/268,992	19-Sep-16	20170034835
LPI/LPD Communication Systems	14/937518	10-Nov-15	20160094989
LPI/LPD Communication Systems	14/980493	28-Dec-15	20160119044
Intrusion Detection and Radio Fingerprint Tracking	14/109,928	18-Dec-13	20160226892
Cooperative Intrusion Detection	14/944,399	18-Nov-15	unpublished
Unmanned Aerial Vehicle Intrusion Detection and Countermeasures	15279425	28-Sep-16	unpublished
Unmanned Aerial Vehicle Intrusion Detection and Countermeasures	PCT/US16/54258	28-Sep-16	unpublished
Cooperative Wireless Networks	14727769	1-Jun-15	20150263835
Cooperative Subspace Demultiplexing in CDNs	14168466	30-Jan-14	20140146924
Cloud Radio Access Network	14709936	12-May-15	20150244430
Coordinated Multipoint Systems	14733013	8-Jun-15	20150270882
Distributed Software-Defined Radio	14789949	1-Jul-15	20150303950
Airborne Relays in Cooperative MIMO	PCT/US16/43852	25-Jul-16	unpublished
Airborne Relays in Cooperative MIMO	15218609	25-Jul-16	unpublished
Pre-Coding in Multi-User MIMO	15283881	3-Oct-16	unpublished
Spread-OFDM Receiver	15295271	17-Oct-16	unpublished
Pre-Coding in Multi-User MIMO	15396567	31-Dec-16	unpublished
Pre-Coding in OFDM	15406926	16-Jan-17	unpublished
Content Delivery in Wireless Wide Area Networks	15075975	21-Mar-16	20160205016
Content Delivery in Wireless Wide Area Networks	15076000	21-Mar-16	20160204990
Edge Server Selection for Device-Specific Network Topologies	15152028	11-May-16	20160255140
Cooperative and Parasitic Radio Access Networks	15347415	9-Nov-16	
Method and Apparatus for Fast Prototyping of Wireless Transceivers	13116984	26-May-11	20110292976
Spreading and Precoding in OFDM	15489664	17-APR-17	Non-pub



VI. FINANCIAL PROFILE

D13 CORPORATE PROFILE

Capital Structure

DEPARTMENT 13 INTERNATIONAL LTD (ASX:D13)

19 05 2017 Change: +0.04 (36.36%) Open: +0.14 High: +0.15 Low: +0.135 Close: +0.15 Volume: 1,504,143



Percent Owned By Management

Shareholders	%
Directors and Key Management	32.77
Top 20 Shareholders	63.75

Tradeable Shares

235,177,235

Escrowed Shares

276,710,000

Options

42,100,000

Research Report:

DJ Carmichael: Speculative **BUY**

Capital of \$5.5 million completed May 5, 2017

BALANCE SHEET AND CAPITAL STRUCTURE

\$000's Au	31-Dec-16
Cash and cash equivalents	4,947
Other current assets	572
Total Current Assets	5,519
Internally developed software	1,407
Other non current assets	389
Total Non-Current Assets	1,796
Total Assets	7,315
Trade and other payables	765
Total Current Liabilities	765
Total Liabilities	765
Net Assets	6,550
Issued Capital	14,774
Other equity and reserves	679
Accumulated losses	(8,903)
Total Equity	6,550

Capital Structure		
Ordinary shares (incl escrowed)	M	511.89
Unlisted Options (various prices < 12.5c, incl escrowed)	M	40.00
Performance rights	M	51.25
Total Securities Fully diluted	M	551.89
Share price (18.5.2017)	\$	0.145
Market capitalisation (undiluted)	\$M	74.22
Market capitalisation (fully diluted)	\$M	80.02

*In Process of Capital Reduction cancellation of all 284 million performance shares to simplify the capital structure

Jonathan Hunter, CEO

ASX.D13

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