Achieving Growth
Satellite Finance Network Annual Conference
21 April 2015
Welcome
Welcome:
Alison Horrocks
Executive Vice President
Inmarsat
Welcome:
Richard Peckham
Business Development Director (Space)
Airbus Defence and Space
Co-Chair SFN
SFN Success Stories
Joanne Wheeler
Partner
Bird & Bird
Co-Chair SFN
Satellite Finance Network

*With you every inch of the way*

Finance and regulatory network for the UK space industry

Aim – to support the growth of the UK space industry at all levels

Launched – 16 July 2013 at UK Space conference in Glasgow

Emerged from – Space Innovation and Growth Strategy (IGS), published in 2010, and the "Restack" of the IGS in 2014.
Aim – to support the growth of the UK space industry

1. Facilitating and attracting investment
   - Connecting industry players (particularly SMEs) with the financial community

2. Identifying regulatory barriers and other impediments to growth
   - Working to create a "space friendly" and competitive regulatory environment for the UK
   - Offering solutions, where they exist, to industry players
   - Encouraging and supporting exporters in areas of finance and regulation

3. Promoting business opportunities between companies
Facilitating and attracting investment

Connecting industry players (particularly SMEs) with the financial community
(including UK Export Finance and advisers or providing an opportunity to present an elevator pitch to investor community)

Some examples

<table>
<thead>
<tr>
<th>Bright Ascension</th>
<th>iSat Networks</th>
<th>e2E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bristol Spaceplanes</td>
<td>Charles &amp; Paul</td>
<td>Travel A1</td>
</tr>
<tr>
<td>UrtheCast</td>
<td>D-Orbit</td>
<td>Tisics</td>
</tr>
<tr>
<td>Alba Orbital</td>
<td>Space Synapse Systems</td>
<td>Kypros Satellites</td>
</tr>
<tr>
<td>Aerospace Resources Ltd</td>
<td>Evening Star</td>
<td>Artemis Space</td>
</tr>
</tbody>
</table>
Identifying regulatory barriers and other impediments to growth

- Working to create a "space friendly" and competitive regulatory environment for the UK
- Delivering key recommendations of IGS – pushing for reform of the Outer Space Act to cap unlimited indemnity; and put UK companies on a level playing field
- Removal of 6% insurance premium tax on satellite risks which placed UK companies at a competitive disadvantage
- Offering solutions, where they exist, to industry players e.g. – providing advice to satisfy "financial standing" criteria to obtain an Outer Space Act licence.
Identifying regulatory barriers and other impediments to growth (cont...)

• Encouraging and supporting exports in areas of finance and regulation
  • Collaboration with, and introductions to, UK Export Finance
  • Assisted a company in the final closing days of a finance facility to enable a valuable export contract to be implemented

Illustrated genuine value of collaboration between SFN, UK Export Finance, a bank and the company.
Promoting business opportunities between companies, and supporting "every step of the way"

Other assistance provided by SFN:

- Introductions to:
  - UKTI Innovation Gateway Team
  - Local Enterprise Partnerships
  - Assistance to lease facilities/offices in various areas (Surrey, Harwell)
  - Networking at conferences/finance briefings
  - Opportunity to provide Elevator Pitches

... more opportunities to come
BUT SFN WOULD NOT EXIST WITHOUT SUPPORT OF:

• SATELLITE ADVISORY BOARD
  • Richard Peckham, Airbus
  • Paul Flanagan, UKspace
  • Antonia Jenkinson, Satellite Applications Catapult
  • Nick Flitterman, Portland Advisers
  • Liam Martin, Access Partnership
  • Bob Waters, UK Space Agency
  • Peter Maplestone, UK Export Finance
  • Neil Stevens, Space Fin Limited
  • Professor Richard Brook, E-Synergy
  • John Aldred and Stephen Ainsworth, Barclays
BUT SFN WOULD NOT EXIST WITHOUT SUPPORT OF:

- Inmarsat
- Satellite Applications Catapult
- UKspace – Jane Ford
- UK Space Agency
- UK Export Finance
- UKTI
- Bird & Bird
- The SFN Members
SPONSORS OF THIS CONFERENCE:

• Bird & Bird
• Barclays
• Norton Rose Fulbright
• Satellite Applications Catapult
• UK Space Agency
• Inmarsat
• Printech
• UKspace
• Oxford Space Systems
• SharpCloud Software
So – what's next?

- Twice yearly newsletter
- "Where to start" mind map web page
- Finance briefing and elevator pitches 3 July 2015
- "Space Industry Directory"
So – what's next?

- Collaboration with European Centre of Space Law (ESA) to provide regulatory and legal seminars
- "BackonBoard" project
- Other collaborations...
- Continuing to identify and bring down barriers to achieving growth
Achieving Growth

Senior Executive Viewpoint:
Chair - Mark Holmes, Editor, Via Satellite
Rupert Pearce, CEO, Inmarsat
Stewart Sanders, CTO, O3b Networks
Tim Sherwood, Chair, Satellite Applications Catapult
Matt Child, SVP Government Sector, Eutelsat
Andrew Wallace – Director, Hermes Integration & CEO, Pyreos
Coffee

sponsored by

BARCLAYS
Overcoming Hurdles – Achieving Growth

Chair – Stuart Martin, CEO, Satellite Applications Catapult
Richard Brook, Co-Founder, E-Synergy
Theresa Condor, VP Corporate Development, Spire
Jonathan Waugh, Head of Public Safety, Airbus Defence and Space
Andrew White, Partner, Bird & Bird
Simon Acland, CIO, Imprimatur Capital
Mike Lawton, CEO, Oxford Space Systems
Overcoming Hurdles to Achieve Growth

- Achieving Series A funding
- Funding a space startup
- Turning Loss into Profit
- Risks in commercial contracts
- Correct management team
- Raising profile

• Richard Brook, E-Synergy
• Theresa Condor, Spire
• Jonathan Waugh, Airbus Defence and Space
• Andrew White, Bird & Bird
• Simon Acland, Imprimatur Space Fund
• Mike Lawton, Oxford Space Systems
Achieving Series A Funding

Richard Brook
Co-founder
E-Synergy
Series A

A company's first significant round of venture capital investment...

... up to the bigger players

From seed stage, friends and family, and small investors ...
Series A

“May be provided in the form of preferred stock and offer anti-dilution provisions to new investors.”

Beware liquidation preferences etc...
Rungs on the ladder

- Readiness
  - Availability of debt and grants?
  - Crowdfunding?
  - Platform?
  - VC?
  - Understanding sources of finance?
- Team
- Traction
- Milestones
Case Study
University Biotech Spin-Out

2004  Platform technology extracted from university
       Killer application after 4 Seed Rounds

2008  Recruited new industry chair
       Series A consortium round: VCs+VHNWs
       Convertible loans + liquidation preferences

       Changed CEO
       Several £m invested in 7 more stages

       Essential to follow VCs to avoid dilution

2014  Buy & build merger: loans converted
       Listed on AIM
Funding a space start-up: from private savings to private equity

Theresa Condor
VP Corporate Development
Spire

Series A Funding Achieved
Start-up Funding: Private Savings to Private Equity

Theresa Condor
Start-up Funding Needs an Exponential Curve

- Revenue
- $ Raised
- Value of Co.
- People

Time

Fundable
Not Fundable
## Typical Funding Progression

<table>
<thead>
<tr>
<th></th>
<th>Private Savings</th>
<th>Angel</th>
<th>A</th>
<th>Venture Debt</th>
<th>B</th>
<th>Venture Debt</th>
<th>PE</th>
<th>(Venture) Debt</th>
<th>IPO</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>When</strong></td>
<td>Month 0</td>
<td>Month 6 - 12</td>
<td>Month 12 - 24</td>
<td>A</td>
<td>A + 1-2 years</td>
<td>B</td>
<td>B + 2-3 years</td>
<td>PE</td>
<td>PE + 3 years</td>
</tr>
<tr>
<td><strong>Amount</strong></td>
<td>&lt; 100k</td>
<td>1 -2mm</td>
<td>5-8mm</td>
<td>20% of A</td>
<td>2 0 -30mm</td>
<td>30% of B</td>
<td>100mm – 1B</td>
<td>50 – 100% of PE</td>
<td>1 – 100B</td>
</tr>
<tr>
<td><strong>Revenue</strong></td>
<td>0</td>
<td>&lt;100k</td>
<td>&lt;1mm</td>
<td>~10mm</td>
<td></td>
<td>100mm</td>
<td></td>
<td>1B</td>
<td></td>
</tr>
<tr>
<td><strong>Timeline</strong></td>
<td>0</td>
<td>1 -3 months</td>
<td>1 – 6 months</td>
<td>A + 3 months</td>
<td>3-4 months</td>
<td>B + 0-6 months</td>
<td>6 months</td>
<td>Simultaneous</td>
<td>12 months</td>
</tr>
<tr>
<td><strong>Employees</strong></td>
<td>3</td>
<td>&lt;10</td>
<td>&lt;25</td>
<td>&lt;100</td>
<td>&gt;100</td>
<td>&gt;250</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Dilution</strong></td>
<td>0</td>
<td>20 – 30%</td>
<td>20 – 30%</td>
<td>10 – 20%</td>
<td>10 – 15%</td>
<td>~10%</td>
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Spire Case Study

<table>
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<th>Spire Progress</th>
<th>Sept ‘12</th>
<th>Jan ‘13</th>
<th>July ‘13</th>
<th>July ‘14</th>
<th>July ‘15</th>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>People</th>
<th>Value</th>
<th>Amount</th>
<th>Time</th>
<th>Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sept ‘12</td>
<td>3</td>
<td>$</td>
<td>&lt; - 50k</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Jun ‘13</td>
<td>7</td>
<td>5x</td>
<td>&gt; - 1.3mm</td>
<td>3 months</td>
<td>&lt;- 150k</td>
</tr>
<tr>
<td>Jul ‘13</td>
<td>12</td>
<td>2y</td>
<td>&gt; - 25mm</td>
<td>1 week</td>
<td>&lt;1mm</td>
</tr>
<tr>
<td>June ‘14</td>
<td>17</td>
<td>10z</td>
<td>&gt; - 25mm</td>
<td>4 months</td>
<td>&gt;-10mm</td>
</tr>
<tr>
<td>July ‘15</td>
<td>~50</td>
<td></td>
<td></td>
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</table>
Turning loss into profit

Jonathan Waugh
Head of Public Safety
Airbus Defence and Space

Series A funding achieved
Space start-up funded
Managing risk in commercial contracts to ensure growth

Andrew White
Partner
Bird & Bird

Series A funding achieved
Space start-up funded
Making profit
Managing risks in commercial contracts

Andrew White, Partner, Bird & Bird LLP, at the Satellite Finance Network (SFN) Annual Conference, 21 April 2015

- Clarify obligations.....
- Agree which party is liable for what.....
- Embed processes for effective contract management.....
Managing risk by clarifying obligations.....

**Key message:** Increase certainty and manage risk by clarifying obligations under a contract. Vague, conflicting or unrealistic obligations are a frequent source of dispute and business risk.....

- What does the promise to deliver involve? Timescales? Level of investment required? A robust supply chain? etc
- What is being provided, and to what standard?
- What conditions are attached (eg third party consents?) Which third parties do you depend upon?
- Payment: what, when, to whom and how?
- Who are the deliverables for? Delivered where? For what purpose?
- Does the customer need a delivery guarantee from provider? Does the provider need a payment guarantee from customer?
Managing risk by agreeing who's liable.....

**Key message:** English law permits businesses entering into contracts to limit or exclude many types of liability for breach, or for the impact of financial difficulty. These arrangements need to be documented.....

- English law upholds 'freedom of contract'. Side-by-side with that concept is the concept of 'freedom to limit' liability
- Financial liability for breach of contract, delay, negligence or certain types of misrepresentation can be limited, or even excluded
- Other solutions for contract breach, or other triggers, include liquidated damages, indemnities, guarantees or termination rights
- These contractual arrangements can go further than under the laws of most other countries (including continental European laws)
- There's only limited statutory protection against 'unreasonable' terms in English law B2B contracts. The bargaining power and resources of the parties are relevant in assessing what's reasonable.....
Managing risk by embedding processes.....

**Key message:** Many contracts, especially long-term or strategic contracts, are built around a relationship requiring cooperation and communication. Embed 'rules of the road' to guide that relationship. This can help to manage risk and to maximise business benefits. For example:

- Agreeing a system of law to govern disputes
- Governance: project meetings, information sharing, audit rights
- Driving performance improvement and value/innovation
- Maximising the value of intellectual property generated by the parties
- Mechanisms for agreeing matters which are deliberately left open
- How to deal with third parties (eg regulators, or violators of rights)
- Early warning systems for problems
- Flexible dispute management, eg mediation or expert determination
- Fixing time limits for making claims, and for other notifications
B2B contracting in the real-world.....

Your behaviour can affect your contractual rights.....

1. .....you can find yourself in a binding contract without meaning to, or without even writing anything down

2. .....you can surrender valid rights without intending to: lesson – manage the contract carefully after signature

3. .....a trusting and cooperative business relationship can sometimes compensate for even a one-sided written contract

Your legal advisers need to help you and empower you by.....

4. .....showing commercial awareness of your sector, and its drivers

5. .....recognising your day-to-day challenges and resource constraints

6. .....providing tools, methodologies and training to drive your excellence in contract negotiation and post-signature management
Ensuring the correct management team to achieve growth

Simon Acland
CIO
Imprimatur Capital

Series A funding achieved
Space start-up funded
Making profit
Contractual risks managed
How to raise your profile with no budget

Mike Lawton
CEO
Oxford Space Systems

Series A funding achieved
Space start-up funded
Making profit
Contractual risks managed
Management team in place
Oxford Space Systems is an award-winning space technology business that is pioneering the development of next-generation deployable structures that are lighter, less complex and lower-cost than those in current commercial demand.
There are currently 2,300+ registered satellites orbiting Earth.

Over the next 10 years this number is forecast to double.
Launch is expensive: £20,000+/ kg

Two biggest factors: size & weight
To maximize cost efficiency, critical components are designed to deploy in orbit.
Deployment Sequence of Large Deployable Antenna
De-Risking Strategy: CubeSats

OSS Prototype Boom / Actuator

Standard 3U cubesat chassis

Deployment of Magnetometer
Press Coverage for 2016 CubeSat Boom Mission

News story
UK Space Agency’s second CubeSat mission is taking shape

From: UK Space Agency
First published: 5 March 2015
Part of: Science and innovation and UK economy

The UK Space Agency’s next CubeSat mission, AlSat Nano, is starting to take shape, following the selection of the mission’s payloads.

The suite of 3 payloads will be developed by UK academic-industrial partnerships that will use the mission for rapid and cost-effective demonstration of new and innovative space technologies.

AlSat Nano is a joint space mission between the UK Space Agency and Algerian Space Agency (ASAL). In March 2014 the UK Space Agency and ASAL signed a Memorandum of Understanding (MoU) under which the two parties agreed to enhance collaboration in space programmes. A specific action identified following the MoU was the establishment of a joint educational CubeSat development programme to be delivered by Surrey Space Centre (SSC), utilising its ties and heritage in the field.

The mission’s payloads include:

SpaceMag-PV Boom
This payload could significantly improve the range of science experiments that a CubeSat could carry by making advances in the field of booms - arms used to hold instrument sensors as far as possible from the spacecraft body to minimise interference.

SpaceMag-PV Boom will flight test the world’s largest retractable CubeSat-compatible boom which will be able to deploy up to 2 metres in length from a volume the size of a cigarette packet. This technology could also form the basis of de-orbit systems for future missions.

The payload also carries a magnetometer, one of the most compact of its class, to carry out measurements of the Earth’s magnetic field. Also on the payload will be RadPET (Radioactivity PET) radiation monitors, and test tokens of a revolutionary flexible solar cell material. The payload is led by Oxford Space Systems Ltd, collaborating with partners including RAL Space and Burlington Instruments Ltd.
Mike Lawton
m: 07740 937 935
mike.lawton@oxfordspacesystems.com

www.oxfordspacesystems.com

OXFORD SPACE SYSTEMS
HARWELL SPACE CLUSTER
HARWELL OX11 8NB
UNITED KINGDOM
e: explore@oxfordspacesystems.com
Overcoming Hurdles to Achieve Growth

- Richard Brook, E-Synergy
- Theresa Condor, Spire
- Jonathan Waugh, Airbus Defence and Space
- Andrew White, Bird & Bird
- Simon Acland, Imprimatur Space Fund
- Mike Lawton, Oxford Space Systems

Series A funding achieved
Space start-up funded
Making profit
Contractual risks managed
Management team in place
Strong profile
Networking Lunch

sponsored by

CATAPULT
Satellite Applications
IP Surgery
Adam Brocklehurst, Patent Attorney, K2 IP
parallel session taking place in
Dopplar – 1st Floor
Financing Growth
Chair: Nick Flitterman, Head of Telecoms, Portland Advisors
Richard Brook, Co-Founder, E-Synergy
Mark Boggett, Managing Director, Seraphim Capital
Marcus Plumley, Director, HSBC
Stephen Ainsworth, Relationship Director, Barclays
Elia Montanari, Head of Financial Control and Management Office, ESA
Michael Lawrence, Business Development Director, Deimos Space UK Ltd
Growth Through Exports

Chair: Steve Young, Head of Sales & Marketing, SSTL
Chris Lee, Head of International Space Policy, UKSA
Terry Coxall, Space Specialist, UKTI
David Harper, CEO, iSat Networks
Ali Sherwani, Deputy Head of International Business Development, UK Export Finance
Farmida Bi, Partner and Head of Islamic Finance, Norton Rose Fulbright
Maurizio Vanotti, Head of Telecom Satellites, SSTL
The UK’s Leading Manufacture of Specialist Satellite Terminals and Systems.
iSat Company Strengths

iSat background

• An established leading UK Space Sector Company

• International government and defence accreditation including NATO, UK List X and ISO9000 with extensive broadcast plus enterprise experience.

• Experienced team of sector specialists; 4 years track record as iSat; 20 years heritage as L-teq and OmniGlobe.
Target activities

• Approve VSAT terminals for Satellite Operators to sell services at new frequencies.

• Targets hit at
  – Qatar Satellite Company (18GHz transmit; 22GHz receive + 27GHz/17GHz Ka)
  – Airbus Defence and Space (X-band)
  – ARABSAT (Appendix Ku)

• First to market gains a commercial and technical IP.
Sales Strategy, 2 routes to market

- To sell end to end solutions direct or
- To supply the terminal into the customers preferred prime contractor (s).
- Opportunities arise to sell satellite bandwidth to create monthly revenues

Diagram:
- Customer (Satellite operator or a satellite bandwidth user).
  - Es'hailSat or Government department
- Prime contractor
  - Customers supply chain
    - iSat
- Suppliers
  - Other suppliers
  - iSat
  - Other suppliers
Company Management Structure

Board Directors
Neil Blackley, John Pocock

Chairman
Kevin Cawood

Ravi Goonesena
Macrae & Co Legal

Ola Lawal
HSBC Project Finance

David Harper
CEO

Martyn Braime
Business Advisor

John Yates
Technical/Commercial Advisor

Andy Chance
Technical Head

Robin Page
Documentation

Steve Jolliffe
IT

Clive Smith
Training

Phil Headley
Constructional Engineer

Sharon Hooper
Quality Manager

David Tudor
Logistics

David Beck
Marketing

Yvonne Sheridan
Commercial Accountant

Ian Townsend
Production Manager

Board of Directors
Full time
operational
CEO and
advisors

Part time
support
Contractors

iSat
Current figures

- £653,036 Year to date sales (end 03/15)
- £249,034 Orders in hand to ship
- £1,472,345 Tenders submitted including:
  - £345,314 18/22GHz fixed antennas
  - £758,156 C-band circular extended.
  - £165,577 18/22 Vehicle mounted
  - £ 98,951 X-band frequencies
  - £ 9,029 Others
- £1,903,329 Additional pipeline opportunities
iSat Company Funding

Funding

• 2011 Initial seed funding £405K Equity
  – Seed funding from Synergy Business.
  – High Net Worth individuals known to the founder.
  – Employees, family and friends.

• 2014 Working capital funding £100K HSBC
• 2015 Working capital funding £125K HSBC

• 3rd stage will be expanding the activities into 3 or 4 times the number of customers
iSats exports offer dramatic growth to £10M by 2020 by exploiting track record and reputation

- Extend sales to...
  - Other satellite operators needing similar terminals
  - Vehicle mounted / Maritime
  - Add services and options.
  - With a stronger balance sheet and technical team
    - Higher value projects for hubs
    - Recurring bandwidth revenues.
Stage 3 Funding Requirements

- More sales to address similar satellite operators with low product development.
- Stronger balance sheet to give confidence to new customers.
- More technical resource
- Incremental developments
- Aim is to create stable monthly revenues and a profitable exit for shareholders.
Typical Finance required by SME to go from 2/3 customer to 10/20

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strengthen critical sales and engineering resources to support the growth objectives.</td>
<td>£300K</td>
</tr>
<tr>
<td>Company awareness and lead generation.</td>
<td>£50K</td>
</tr>
<tr>
<td>Additional Specialist Terminals development.</td>
<td>£350K</td>
</tr>
<tr>
<td>Engineering and manufacturing tools and resources.</td>
<td>£200K</td>
</tr>
<tr>
<td>Cash requirements to gear the company correctly.</td>
<td>500K*</td>
</tr>
<tr>
<td>Potential market consolidation and M&amp;A.</td>
<td>Up to £2M</td>
</tr>
</tbody>
</table>

* HSBC currently provide £125 and are interested in making money- obviously.
Conclusions

• Established sales strategy that is working.
• Funding can accelerate dramatic growth in a global market.
• Related target markets have been identified with small quantifiable technical development required.
• Potential business opportunities exist for iSat to reach £10M sales by 2021 and provide an attractive proposition for acquisition.
• Existing owners with a desire to move forward.
Closing Remarks
Rupert Pearce
CEO
Inmarsat
Networking Reception

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