

## **Production Partnership Management**

**Blom Aerofilms**

**Ordnance Survey HQ**

**7<sup>th</sup> - 9<sup>th</sup> November 2007**



## **Production Partnership Management**

Blom Aerofilms Overview



- Formerly "Simmons Aerofilms"
- Employ 120 staff in the UK
  - Cheddar, Somerset
  - Milton Keynes, Buckinghamshire
- Several national framework agreements
  - Ordnance Survey
  - Environment Agency
  - Highways Agency
  - Government
- Market Sectors
  - National mapping
  - Transportation & infra-structure
  - Geographic Information Systems (GIS)
  - Security

Head Office, Cheddar, UK



### **Slide 1 – Blom Aerofilms Background**

•**Formerly known as "Simmons Aerofilms"** – the company was established in 1965, incorporating Aerofilms in 1997. We then became part of the Blom Group in 2005.

•**The company employs 120 staff in the UK across two offices** – The main production and management office is located in Cheddar, Somerset with our aerial operations located in Milton Keynes Buckinghamshire

•**Within the industry the company is involved with a variety of clients and has built up a number of long standing relationships. This list includes the:**

- Ordnance Survey
- Environment Agency
- Highways Agency
- Government

•**Currently the business focus is on a number of sectors including:**

- National Mapping
- Transportation and Infra Structure
- Geographic Information Systems
- Security

**Production Partnership Management**  
Blom Group Overview



- Blom is Europe's largest provider of aerial imagery & geospatial data
- Group employs approximately 1,000 staff in 10 countries
- Substantial aerial assets
- Blom Aerofilms:
  - ISO Standard 9001:2000
  - OHSAS 18001:1999
- Operating companies
  - BlomInfo, Denmark
  - Blom-Kartta, Finland
  - Blom Deutschland, Germany
  - Blom Nusantara, Indonesia
  - Blom CGR, Italy
  - Blom Geomatics, Norway
  - BlomInfo Geonet, Romania
  - Blom Sistemas Geoespaciales, Spain
  - BlomInfo, Sweden
  - TopEye, Sweden
  - Blom Aerofilms, United Kingdom

**Slide 2 – Blom Group Overview**

•The Blom Group itself is Europe's largest provider of aerial imagery and geospatial data.

•It employs approximately 1,000 staff in 10 countries – the list of which can be seen on the right hand side.

•The group has access to a number of aerial assets: which includes

*18 x aircraft*

*5 digital cameras*

*8 film cameras*

*4 Optech lidar systems (fixed-wing)*

*5 TopEye lidar systems (helicopter)*

*And the recently acquired Hawkeye II Bathymetric System*

•Within the group itself Blom Aerofilms is registered with:

•ISO Standard 9001:2000

•OHSAS 18001:1999

➤ **2002 – present:** Ordnance Survey Contract 2002 Map Update program (Positional Accuracy Improvement, PAI & Real World Change, RWC)

- Annual update of 1:2500 scale mapping
- Mono Editing Environment
- Staffing level
  - Currently 32 staff
  - At its height close to 80 staff



**Slide 3 - Current Contract and PPM**

•Since 2002 Blom Aerofilms has been involved in Production Partnership Management through its current map update contract with the Ordnance Survey, This will be the main area of focus for this presentation.

•The contract itself involves the Annual Update of 1:2500 scale mapping and includes the completion of:

- Aerial photography
- Ground Control
- Ortho Production
- Vector Mapping

•In our offices the mapping is completed in a mono editing environment using Strumap software and working to an accuracy of 1.1 RMSE

•We currently have 32 staff working on this contract in two offices but at the height of the project is has been closer to 80 staff members

**Production Partnership Management**  
Previous Contracts



- **2005:** Contract 2000 Remedial Update
  - Upgrade of existing 1:2500 mapping
  - Team of 5-6
  
- **2003/2004:** Rural Towns Update
  - 127 UK towns
  - 1:1250 scale mapping
  - Team of 40-50 at its height
  
- **2001:** 1 Year Contract
  - 1:2500 Map Update
  - Team of 10-15

**Slide 4 – Previous Contracts**

•Over a similar period as Contract 2002, Blom Aerofilms has also worked with the Ordnance Survey on a number of other similar projects, again utilising production partnership management: This has included:

**2005 – Contract 2000 Update:** upgrade of existing 1:2500 scale mapping and involved 5-6 staff members

**2003/2004 – Rural Towns update:** upgrade of 127 towns at 1:1250 scale mapping and involved at its height 40-50 staff members

**2001 – upgrade of 1:2500 scale mapping with a team of 10-15 people**

**As you can see, as a result of these projects there has been a high level of staffing required with the company often over short time periods.**

**Add to this a complex specification and the contracts requirements of high levels of productivity and data quality .....then Production Partnership has been essential in managing and achieving these targets.**

- Key points of PPM and Contract 2002:
  - Quality plans
  - Accreditation process
  - Quality Control (QC)
  - Quality Assurance (QA)
  
- Core group of staff:
  - Stability
  - Knowledge & experience
  - Maintain levels of quality & productivity

**Slide 5 – Contract Overview**

•With the start of the PAI/RWC Contract we have been working closely with the Ordnance Survey with particular focus on continual development and improvement across the flow-line, covering areas of training, production, quality and management.

•This has been achieved through a number of key components:

**Contract Quality Plans**

**Continual Accreditation Process**

**Quality Control and the theme of continual feedback**

**Quality Assurance in particular looking at data production and processes**

**There is also one other factor which has been essential to the success of this process and that has been to maintain as much as possible a core of experienced staff members who can help**

- Bring stability to the project
- Train and pass down knowledge and experience effectively
- And maintain the high levels of quality throughout the contract period

- Contract Quality Plan
  - Client expectations & technical requirements
  - Production processes
  - QC & QA procedures
  - Project management structure
  - Equipment
  - Specific Requirements: Acceptable Quality Level's (AQL's)
  
- Contract 2002 – Quality Plan
  - Approved by OS
  - Managed by Blom

**Slide 6 – Contract Quality Plan**

•Looking at each of these components in a bit more detail:

•**Contract Quality Plan**

This was produced at the start of the contract and is revised and reviewed by the Quality Assurance Manager and Project Manager. It outlines the objectives and working procedures for the whole flow-line from capture of aerial photography to vector update. It includes the following detail:

- The Client expectations and technical requirements
- Descriptions of the Production processes and how they are to be carried out
- The Quality Control and Quality Assurance procedures
- The project management structure, illustrating the staff involved and their responsibilities
- The hardware and software to be used on the project
- And any specific requirements such as Acceptable Quality Levels from the Client

•For Contract 2002 a quality plan was produced and revised before final approval by the Ordnance Survey. Since then it has been managed and updated by Blom Aerofilms as new procedures were brought in or as a result of changes in the specification. Each version is made available to the Ordnance Survey.

•By accurately documenting the procedures it ensures that each process and sub-process is completed correctly and to specification and allows everyone to work to the same goal including the client. This is even more important when large numbers of staff are involved.

- Accreditation process
  - Initial training
  - Core staff
  - Internal training
    - 5 week program
    - Training package
    - Final test piece
    - Final accreditation list
    - Training manual



**Slide 7 – Contract Accreditation**

•The accreditation process has been an important part of the contract and involved the acceptance of personnel to work on the varying stages of the contract.

•At the outset, initial training was completed by the Ordnance Survey, giving a background and starting point for the contract. This was done with presentations and demonstrations with the vector data.

•The core staff that were maintained from the previous Contract in 2001 were trained and accredited to work on the flow-line. They would then act as the QC and trainers for new starters to the contract

•Blom Aerofilms then set-up its own training program with a dedicated trainer:

•This consisted of a 5 week program for new employees which regardless of background helped to bring everyone up to the same level of knowledge and experience.

•Training was completed using software tutorials, presentations, documentation on the flow-line and specification and editing a number of test pieces

•A final data test piece was developed which would act as the accreditation bench mark – editors who passed this test would move onto the flow-line. Those who failed received further training.

•As more staff began work on the flow-line this built up an list of accredited staff, indicating when they started production work and which parts of the flow-line they could work on, whether it be editing or quality control for example. This list was supplied to the Ordnance Survey and helped in auditing purposes and the focussing of testing on new editors by ourselves and the OS.

•A training manual was produced after the first few months and documented the training required before production and the continual training that was taking place at each stage of the flow-line – right through from image production to vector update.

•This whole process has been a major influence on the quality and continual improvement of the project.

- Quality Control
  - Achieve objectives
  - Monitor processes
  - Monitor staff abilities
  - Target training
  - Continual feedback
  
- Quality Assurance
  - Continual review and improvement
  - Identify trends
  - Improve any procedural weaknesses
  - Specification issues

**Slide 8 – Quality Control and Quality Assurance**

Looking at the last component to the contract – QC and QA

•These disciplines were completed by a select number of staff who had been accredited to work on this part of the flow-line.

•Due to the complex specification it usually required three to four months of production work and further training before QC accreditation was tested and if successful granted.

**•The QC targets consisted of the following:**

- To achieve the objectives set by the client i.e the AQL's and Key Performance Indicators (KPI's)
- To monitor the processes taking place in accordance with the Quality Plan and client specification.
- Monitor staff abilities – work was graded to enable the identification of any weaknesses or trends – this was all feedback to the staff to ensure errors were eradicated
- To highlight staff that required additional training or indicate changes that may be needed in the initial training program
- To provide continual feedback to the staff to improve their skill base and raise the standards on the project – these results were also supplied to the OS for review and testing

**•The QA targets for the project consisted of:**

- Continual review and improvement – completing the cycle of plan-do-check-act – this also involved sharing ideas of best practise with the Ordnance Survey
- Identify trends within the staff for further improvement and identify those who can be accredited to work on other areas of the flowline
- Improve any process weaknesses either by training or developing and implementing any automated routines
- Communicating any specification changes or changes in practise

It is essential both parties are involved in this part of the contract so that common goals can be met and there is an appreciation of what can be achieved.

➤ Blominfo Geonet: Targoviste, Romania



- In operation from 2004
- At its height 35 staff
- Currently 23 staff

- Set-up/Accreditation
- Quality Control
- Continual feedback
- Pool of accredited staff

**Slide 9 – Contract sub office: Romania**

Moving on some of the other areas of the contract where PPM also had an influence:

In 2004 we set-up an office in Targoviste, Romania as part of an increase in the level of production. At its height there were 35 staff working on Contract 2002 and currently that number today is around 23 staff members.

•**As with the UK office** when the new employees started they went through the same training program and accreditation process. They continue to be managed by us with two of our UK staff permanently placed in the overseas office. This has aided communication and continuity within the project. The office has been visited and audited by the Ordnance Survey as part of the continual testing.

•**Quality Control** – this was initially completed in the Cheddar office but as the skill base increased in Romania this was gradually moved over and they now complete all their own Quality Control. QA remains in the cheddar office.

•**Continual Feedback** – it has been essential to maintain the high levels of feedback especially for an overseas office which can feel detached – this has been done by general and personal feedback – via reports, memos, presentations, and continual updates on the programme and contract management –

Within the UK office there is always a dedicated point of contact for the overseas office to ensure ease of flow of information and data.

•As a result of this contract and PPM we now have a pool of accredited staff who are working within BlomInfo Geonet who could be used again if and when the contract required.

- Eurosystems: Katowice, Poland (2004-2005)
  - Trained and Accredited in UK
  - Production in Poland
  - Quality Control
  - Pool of accredited staff
  
- Sub-contractors
  - Rural Towns Update
    - Training:
      - In house
      - On site
  - Continual feedback

**Slide 10 – Contract Sub Office: Poland**

•As part of production increases we also opened an office in Poland

•In this case the staff were trained and accredited in our Cheddar office, remained there in production for a few months before returning the Polish office to continue the contract production work.

•With their experience from working in the UK they completed their own Quality Control within their production centre. Similar to Romania we also had one member of our UK staff permanently sited in the Polish office.

•Once again we then had a pool of accredited staff, some of which have now moved to the UK to work in our Cheddar office.

•The whole accreditation process provides a level of confidence in the ability of a staff member to work on not only on Contract 2002 but also other company mapping projects. Safe in the knowledge that the initial skill base is there.

•**Subcontractors**

•During the height of the rural towns project we used a number of UK subcontractors for varying aspects of the project. With a very complex specification and high levels of quality and productivity it was again essential to closely manage the whole flowline.

•For this project the training and accreditation of the staff was completed in house and on site, with emphasis very much on making them feel like an extension of our current department ensuring communication was continual and effective.

•Continual feedback was provided via reports, comment logs and regular visits.

**Production Partnership Management**  
Contract Comparison



- Partnerships – Long term “framework” contracts
  - KMS, Danish National Mapping
  - Highways Agency, UK
  - Government, UK
  - Pictometry
  
- Partnerships – Short term contracts
  - Project Plans
  - Internal Management System – ISO 9001
  
- Partnerships – As consultants
  - Caribbean Island Projects

**Slide 12 – Contract Comparison**

A few comments on some other company projects where a similar production partnership system is in use:

**Partnerships – Long Term**

**KMS – National Mapping – long standing relationship** - use detailed quality plans, close client liaison and work from QA feedback reports

**Highways Agency – UK** – dedicated project staff members with external audits for continual review and improvement

**Government Agencies, UK** – accredited staff, processes and documentation in place. The client provide regular audits, feedback and meetings

**Pictometry Contract** – uses detailed quality plans and procedures with a lot of development in software and hardware and working closely with clients to improve their understanding and what can be achieved.

**Partnerships – Short Term**

**Even on short term contracts it is possible to implement PPM –**

For these contracts we utilise detailed Project plans and have a working management system with internal procedures that conforms to ISO9001

**Partnerships – As consultants**

On some contracts for example in the Caribbean we work closely with our clients using our expertise and knowledge to develop their own specifications and requirements. We have drafted a number of survey specifications for one of the islands which is now being carried forward for use on other islands in the group.

## **Production Partnership Management Summary**



- Summary
  - Through Production Partnership Management:
    - Achieved Quality & Productivity Targets
    - Reduced Costs
    - Pool of Accredited Staff
    - Investors In People (IIP)

### **Slide 13 – Summary**

So to summarise:

**Through Production Partnership Management: Blom Aerofilms has been able to:**

- Achieve it quality targets in terms of the AQL's and KPI's and over a sustained period – ensuring productivity targets are also met. The continual process of review and improvement and the sharing of ideas and best practises has been essential.**
- Reduced Costs on the project by operating a continually improved workflow, implementing automated routines through development and working with efficient processes and staff.**
- Over the period of these Contracts we have accredited around 140 staff members, the majority of whom are still employed within the company. This gives us a pool of people who we know have the ability to work on these contracts. The accreditation process also provides the basic skills for the staff to work on other similar projects.**
- Finally, as a result of demonstrating a continual development of the company's staff we have been able to use this as part of the company's accreditation for Investors In People**