ANALYST & MEDIA DAY: Security Solutions
Bern, March 31, 2009
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>as of 12.30</td>
<td>Light Lunch</td>
</tr>
<tr>
<td>13.30 – 13.45</td>
<td>Welcome Address CEO (Riet Cadonau)</td>
</tr>
<tr>
<td>13.45 – 14.00</td>
<td>Presentation Division Security Solutions (Fritz Gantert)</td>
</tr>
<tr>
<td>14.00 – 15.00</td>
<td>Presentation Security Communication (Fritz Gantert)</td>
</tr>
<tr>
<td></td>
<td>(Products, Markets, Customer References, R&amp;D)</td>
</tr>
<tr>
<td>15.00 – 15.15</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>15.15 – 16.15</td>
<td>Presentation Mobile Test Solutions (Beat Gerber)</td>
</tr>
<tr>
<td></td>
<td>(Products, Markets, Customer References, Integration Argo/Comarco incl. Product Demonstration)</td>
</tr>
<tr>
<td>16.15 – 16.45</td>
<td>Closing Session / Q&amp;A</td>
</tr>
<tr>
<td>as of 16.45</td>
<td>Drinks</td>
</tr>
</tbody>
</table>
WELCOME ADDRESS CEO
Riet Cadonau

- About Ascom
- 2008: Targets achieved
- Acquisition of TEMS
ABOUT ASCOM

Ascom is a business-to-business provider of customized communication solutions in a niche market. The company focuses on "Mission-Critical Communication" in two core areas: Wireless and Security Solutions.

- Wireless Solutions is a leading provider of wireless communication solutions for customers in the areas of health, industry and trade.

- Security Solutions specializes in integrated communication solutions and alarm systems, both military and civilian use, as well as on products and services for telecom operators.
## 2008 - TARGETS ACHIEVED (1)

<table>
<thead>
<tr>
<th></th>
<th>CHFm</th>
<th>2008</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incoming Orders</td>
<td>511.9</td>
<td></td>
<td>545.6</td>
</tr>
<tr>
<td>Net Revenue</td>
<td>509.2</td>
<td></td>
<td>490.5</td>
</tr>
<tr>
<td>EBIT</td>
<td>44.0</td>
<td></td>
<td>(16.1)</td>
</tr>
<tr>
<td>EBIT margin</td>
<td>8.6%</td>
<td></td>
<td>n/a</td>
</tr>
<tr>
<td>Profit from continuing operations</td>
<td>32.7</td>
<td></td>
<td>(20.6)</td>
</tr>
<tr>
<td>Group profit (after divestments)</td>
<td>8.2</td>
<td></td>
<td>(48.1)</td>
</tr>
</tbody>
</table>
2008 - TARGETS ACHIEVED (2)

- Rigorous and on schedule implementation of the VITESSE investment program
- Divestment of all four discontinued and loss-making units (Traffic in Switzerland, Industry Switzerland, Toll and Payphones) had been completed on schedule by year end 2008
- Successful acquisitions of two companies as part of the growth and internationalization strategy:
  - Argogroup (UK based): Transaction closed in March 2008
  - Comarco WTS (US based): Transaction closed in January 2009
ACQUISITIONS

- With the acquisitions of Argogroup and Comarco WTS, Ascom has started to demonstrate its capability to grow inorganically in 2008.

- Ascom continued to make a further value-enhancing acquisition by announcing the TEMS (= currently an Ericsson business) acquisition on March 23, 2009.

- Acquisitions remain a component of the growth and internationalization strategy. The clearly defined acquisition criteria continue to serve as the basis of decision making.
<table>
<thead>
<tr>
<th>Acquisition Criteria</th>
<th>TEMS Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic fit (Mission-Critical Communication)</td>
<td>Yes, complementary to Mobile Test Solutions</td>
</tr>
<tr>
<td>Focus on offering and/or geographic extension</td>
<td>Yes, both</td>
</tr>
<tr>
<td>Own technology and/or customer base</td>
<td>Yes, both</td>
</tr>
<tr>
<td>Profitable business (track record)</td>
<td>Yes, highly profitable</td>
</tr>
<tr>
<td>Potential for profitable growth</td>
<td>Yes</td>
</tr>
<tr>
<td>Management / key people strength and retention</td>
<td>Yes, both</td>
</tr>
<tr>
<td>Interested in being acquired and reasonable price</td>
<td>Yes, both</td>
</tr>
</tbody>
</table>
TEMS – COMPELLING STRATEGIC RATIONALE

1. Acquisition of a global leading market player with a large installed base and critical mass in mobile network testing and optimization

2. Profitable, software-driven business model

3. Experienced, successful and committed management team

4. Enables Ascom to broadly cover the mobile testing value chain by adding planning and optimization to Ascom’s current testing capabilities

5. Creates a strong third pillar for Ascom in line with its “Mission-Critical Communication” strategy
MOBILE NETWORK TESTING – KEY SEGMENTS

- Testing of services and applications over the network
- Measurement of network during operation (signal strength, capacity, call quality, user experiences)
- Fault diagnosis and identification of measures to improve performance and radio coverage
- Software tools for analyzing data from network elements
- Optimizing cell-site locations and configurations
INTEGRATING TEMS

[ACQUISITIONS]

2009

ASCOM GROUP

Wireless Solutions
Security Solutions
MTS

2010

ASCOM GROUP

Wireless Solutions
Security Communication
Network Testing
Ascom – Three Clearly-Focused Divisions

### Key Numbers (2008 pro-forma)

<table>
<thead>
<tr>
<th></th>
<th>Wireless Solutions</th>
<th>Security Communication&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Network Testing&lt;sup&gt;2,3&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales (CHFm)</td>
<td>308</td>
<td>134</td>
<td>251</td>
</tr>
<tr>
<td>EBIT (CHFm)</td>
<td>36</td>
<td>6</td>
<td>38</td>
</tr>
<tr>
<td>Margin (%)</td>
<td>11.7</td>
<td>4.4</td>
<td>15.2</td>
</tr>
<tr>
<td>Employees (no.)</td>
<td>1,168</td>
<td>403</td>
<td>640</td>
</tr>
</tbody>
</table>

### Mission Critical Communication – Targeted End Markets

- Hospitals, elderly care, industry, hotels, retail sector, secure establishments (e.g. prisons)
- Mobile workplace equipment
- Defense, public safety and infrastructure operators (rail, road, others)
- Mobile network operators, service providers, infrastructure vendors, governmental agencies

### Market Position

- No. 2 in European enterprise DECT
- Leading in paging and professional messaging
- Leading position in domestic markets (CH/AT/FI) for security communication
- Leading in Benchmarking and Optimization
- No. 2 in Stationary Testing

Notes:
1. Excluding TNS, S&S and MTS
2. Including TNS, S&S, MTS and Comarco WTS (Comarco WTS not consolidated for 2008 in Ascom Group); CHF/USD=1.1891
3. Before integration costs and amortisation of intangible assets acquired
4. Unaudited pro-forma numbers except for Wireless Solutions

Security Solutions March 2009 © Ascom
OUTLOOK 2010

Priority

- Integration of TEMS

M&A activities

- Additional acquisitions will only be made, if
  - TEMS and the Group perform according to expectation
  - General market conditions show no further substantial deterioration

- If there is any additional acquisition in the next 18 months, it will be smaller compared to TEMS
CONTENT

- Introduction Security Solutions Division
- Security Communication including Demonstration
MISSION CRITICAL COMMUNICATION FOR SPECIFIC CUSTOMER SEGMENTS

SECURITY SOLUTIONS (‘OUTDOOR’)

- Defence, Public Safety organizations and infrastructure operators
- Telecom operators

Core segments

Product/Service offering

- Solution supplier, contractor and system integrator for defence, public safety (Voice, Alarming, Messaging, Mobilisation) and infrastructure operators
- Network quality of service benchmarking and diagnostic systems for mobile operators
- Software solutions and services for Telecom operators

Key geographics

- Security Communication: Today focus on Switzerland, Austria and Finland
- Telecom Solutions:
  - MTS: globally active
  - TNS: Switzerland and Germany
  - S&S: Germany and Switzerland
2007

Defense
Publ.Safety
MTS
Mobile Test Solutions
TNS
TelcoNet Services
S&S
Systems & Solutions
Traffic
Industry CH

2008

Merged
Acquisitions

Security Communication
MTS
Argogroup
Comarco
TNS
S&S

Divested
Divested

EBIT - 28.8 MCHF
EBIT + 9.7 MCHF
WHAT MADE US ACHIEVE OUR TARGETS IN 2008?

1. Streamlining of the activities
   - Divestment of Traffic in Switzerland and Industry Switzerland
   - Restructuring

2. Simplified organisational structures and business processes
   - Merger of Defense and Public Safety to Security Communication Switzerland

3. Outstanding performance in Security Communication Switzerland, MTS and S&S
   - Major military contracts run according to plan

4. Mobile Test Solutions achieved critical mass
   - Two acquisitions (Argogroup and Comarco WTS) allowed MTS to achieve a leading position
   - MTS according to plan including the acquisitions
ORGANISATION

Valid as of 01.01.2009

Security Solutions
Dr. Fritz Gantert

Human Resources
Kurt Renggli

BD
F & C
Hans Zimmermann
Stephan Trösch

SECURITY COMMUNICATION

Switzerland
Bruno Fuhrer

International
Roland Küpfer

Strat. Marketing / Product Management
Hans Zimmermann

R&D
Dr. Martin Paping

Supply Chain Management
Peter Monte

TELECOM SOLUTIONS

Mobile Test Solutions
Beat Gerber

TelcoNet Services
Dr. Walter Daumann

Systems & Solutions
Michael Wallrath
LOCATIONS

- Germany
- UK
- Switzerland
- USA
- Russia
- Finland
- Poland
- Czech Republic
- Austria

[ SECURITY SOLUTIONS ]
SECURITY SOLUTIONS – FOCUS ITEMS 2009

1. Efficiency
   - Further operational improvements

2. Security Communication
   - Successful delivery of large defence projects
   - Continue internationalization

3. Mobile Test Solutions
   - Finalize integration of Argogroup and Comarco WTS and capitalize on the leading position

4. Innovation
   - Continue to invest in own product portfolio
SECURITY COMMUNICATION

- Market Segment Defense
- Market Segment Public Safety
- Market Segment Infrastructure (Rail & Road)
MARKET TRENDS

1. Increasing threats against society’s vital functions (terrorism, war, natural disasters etc.) is driving demand for security, typically driven by government regulation.

2. Demand for situational awareness & Network-Enabled Operations steering investment towards C4ISTAR\(^1\).

3. Growing significance of cooperation both internationally and between domestic agencies making technical interoperability a key driver.

4. Growing demand for real-time information and continuous secure communications to inform staff, operations and public.

5. Increasing pressure on government budgets – integration of legacy systems, upgradeability, investment protection.

6. Standardised systems will eventually replace proprietary technologies.

\(^1\)C4ISTAR: Communication, command, control, computing and intelligence, surveillance, target acquisition, reconnaissance.
ASCOM ADDRESSABLE MARKET - OVERVIEW

**DEFENCE**

- Est. average market size*: CHF 520m
  (Finland, Poland, Switzerland, Austria)
- Est. annual growth: 2% to 4%
  (Finland, Poland, Switzerland, Austria)

**PUBLIC SAFETY / RAIL & ROAD**

**PUBLIC SAFETY**

- Est. average market size*: CHF 400m
- Est. annual growth: 5% to 7%

**EMERGENCY CALL**

- Est. average market size*: CHF 580m
- Est. annual growth: c. 5%

**COMPETITORS**

**Global:** Thales, Tadiran, Elbit, EADS, Rhode & Schwarz, Harris, Cisco

**Local:** CH RUAG, Siemens / FIN Insta, Electrobit

**Alarming:** TAS, Multicom, WebWay One, Chiron, Netcom

**Mobilisation:** Swissphone, Dolphine Systems, Frequentis, IMS, Thales

**Rail & Road:** Funkwerk, Frequentis, Alpine

**Solutions:** Tyco, Swissphone, EDS, Securiton, TSA

Source: Management estimates

*Market size / addressable market -> figures based on current offering and approached geographic market
BUSINESS MODEL

Market

- Defence
- Public Safety
- Rail / Road

Channel

- Direct Sales / own subsidiaries
- Partner
- VAR's

Offering

Products / Solutions / System integration / Services

Applications

- Access Node
- AlarmLink
- EmergencyLink
- NIS RAIL
- NIS ROAD

Platforms

Ascom openAccess / Ascom openTAS

3rd Party Products
PLATFORM STRATEGY – TWO CORE PLATFORMS

Coming from more than ten independent product lines .....  
⇒ Concentration on two platforms—openAccess® / openTAS® and dedicated applications

⇒ Generic functions are located in the basic platforms-segment specific features -> application layer

Structure openAccess®:
- Standard hardware: COTS* -> PC- boards, servers, standard interfaces
- Specific hardware: Own development -> Mil-interfaces, end devices (e.g. help points)
- Standard software: Public Linux- distributions
- Application specific software: Own development

Structure openTAS®:
- Standard hardware: COTS* -> Work stations, servers, standard interfaces
- Specific hardware: Own development -> interfaces, end user terminals (e.g. help points)
- Standard software: Web browser, data base
- Application specific software: Own development

*COTS = Commercial of the shelf
SECURITY COMMUNICATION
Market Segment Defense
MARKET SEGMENT DEFENCE

COMMUNICATIONS
- Fixed and mobile networks
- Multi-purpose access nodes
- Remote radio over IP
- Secure transmission solutions (own encryption code)

C4I
- Multimedia systems for peace support operation camps
- Management and information systems
- Secure message switching

INTEGRATED LOGISTICS SUPPORT
- Docware and training for users and maintenance staff
- Full live cycle support

OFFERING
- Communication Rack / PC
- Access Node (rugged / non-rugged)
- Hybrid Mains and Optical Transmission
- Radio over IP
- Interfaces / Gateways
- Optical Line Termination Unit
- Multimedia C3 System
- Training
- Electronic Documentation

CLIENTS

Finnish Defence Forces

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederazione Svizra
Swiss Confederation

1 C4I: Command, Control, Communications, Computers, Information
TACTICAL COMMUNICATIONS LANDSCAPE
OFFERING DEFENCE – PRODUCTS & SOLUTIONS

Ascom openAccess® platform

Fixed Headquarters
- Com Rack 19"
- Access Node
- ROIP 19"

Deployable Headquarters
- Com Rack 19"
- Tactical Access Node
- OLTU Access Node
- ROIP 19"

Tactical Units
- Com PC ruggedized
- Pentacom
- Com Rack ruggedized
- Access Node
- HMT1000
- Tactical Access Node
- ROIP

Services
Consultancy, (customer specific) system design, project management, engineering, system integration, assembly, testing, documentation and training, life cycle support
IMFS UPGRADEABILITY

Voice

+ Data

Mob Fhr
Data Radio
LWL-4
Com Rack

IMFS Plus
Datarate: 7Mbps per Channel
LWL-1
BSM opt
R-905

IMFS
BSG 93
Delta/PCM
Voice Switch (Vm)

CNRI SEx35

96 97 98 99 00 01 02 03 04 05 06 07 08

‘IP Everywhere’
SECURITY COMMUNICATION
Market Segment Public Safety
# MARKET SEGMENT PUBLIC SAFETY

## ALARMING
- Fire
- Burglary & Aggression
- Remote siren control
- Water alarms

## MOBILISATION
- Secure network
- Management system to mobilise
- Fire brigades, Rescue services, Police and Civil forces

## SYSTEM INTEGRATION & OPERATING
- Automatic Fingerprint Identification
- Legal interception
- Radio transmission
- Dispatching

## OVERVIEW

### OFFERING
- Alarming application
- End device for different networks
- Security transmission network
- Management Centre for the INFRANET
- Ascom openTAS based mobilization application
- Emergency call dispatching
- Mobilisation data management centre
- Siren Alarm remote control
- Dispatching systems; Biometry: automatic fingerprint ID (AFIS)
- Build and maintenance of radio networks (analogue & TETRA)
- Intelligent video surveillance

## CLIENTS
- Police
- Securinet
- City Council of Prague
- Swiss Confederation
PUBLIC SAFETY CUSTOMERS

Solutions

Command & Control Center
Service Provider / Public Authority

Presentation
Network Service

Alarming

Security Communication

Mobilisation

PUBLIC SAFETY CUSTOMERS

Solutions

Network Services

Presentation

Public Safety Customers

Security Communication

Mobilisation
THE openTAS PLATFORM

Tools for Service Providers

openTAS Service Providing

- Produce results faster, more efficient and cheaper

openTAS Shop
- Maintenance
- Technical supervising
- Security applications, alarming
- Mobilization
- Distributed information
- Maintenance of vending machines

openTAS Service Platform

Applications for end users

- openTAS Maintlink
- openTAS FacilityLink
- openTAS AlarmLink
- openTAS EmergencyLink
- openTAS InfoLink
- openTAS LogLink
SECURITY COMMUNICATION
Market Segment Rail & Road
# MARKET SEGMENT RAIL & ROAD

## OVERVIEW

### ROAD
- Emergency call
- Dispatching
- System integration

### RAIL
- Station communication
- Information and Emergency call
- Dispatching
- System integration

## OFFERING

### ROAD
- Emergency call along the motorways and in tunnels
- Emergency dispatching
- GSM/Solar Emergency call box

### RAIL
- Public address announcements at railway stations
- Emergency call along the tracks and in tunnels
- Communication systems for operations control centres

## CLIENTS

- SBB
- Transport for London Underground
- Wiener Linien
- bls
SEGMENTS

NIS for RAIL / Metro Application

Customers
National rail operators, private railways, mass transportation systems

Applications
Integrated communications system, gateway between networks using different technologies, decision support system, control of CCTV systems

NIS for ROAD Application

Customers
Public and private tunnel and highway operators.

Applications
Emergency call, information enquiries, operational communications, command and control centres, SCADA functionalities and electro-mechanical systems.

NIS for Industry Application

Customers
Companies, private customer and organizations

Applications
Integration of access control, CCTV, telephony and control/supervising of third party systems.

NIS for City Security Application

Customers
Public authorities

Applications
Emergency call, information enquiries, CCTV-Integration over one operator position and control/supervising of third party systems.
REFERENCE PROJECT
LUL Tube Lines

<table>
<thead>
<tr>
<th>QUANTITY</th>
<th>COMPLETED</th>
<th>PROJECTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>NIS central unit</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>data point (IO-Contact)</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>help points</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>CCTV cameras</td>
<td>600</td>
<td></td>
</tr>
<tr>
<td>operator position</td>
<td>19</td>
<td>Neu CTI zu 3rd Party HCI</td>
</tr>
</tbody>
</table>
SECURITY COMMUNICATION
Internationalization
GO TO MARKET STRATEGY

DIRECT CHANNELS:
SeCom Country Organisations:
- Full supplier:
  - Products
  - Solutions
  - System integration
  - Services
- (to be extend in AT / FIN)

INDIRECT CHANNELS:
Other Countries SeCom International

3rd party Offering
Own offering openAccess® / openTAS

Value Added Reseller / System integrator (in some cases)
Local Value Added Reseller / System integrator /
# Reference Projects

<table>
<thead>
<tr>
<th>Customer</th>
<th>Project</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNMIBH - UN Mission in Bosnia &amp; Herzegovina</td>
<td>Communication network based on 20 Ascom Access Nodes</td>
<td>Bosnia Herzegovina</td>
</tr>
<tr>
<td>Finnish Defence Forces</td>
<td>Communication system incl. own product Access Nodes based on openAccess</td>
<td>Finland</td>
</tr>
<tr>
<td>Cantonal police Bern</td>
<td>Alarming solution incl. own products Emergency Link, MST web</td>
<td>Switzerland</td>
</tr>
<tr>
<td>Securinet</td>
<td>Alarming solution incl. own product AlarmLink based on Ascom openTAS</td>
<td>Norway</td>
</tr>
<tr>
<td>TBA Bern (Cantonal Traffic authority)</td>
<td>Emergency call system incl. own product NIS ROAD</td>
<td>Switzerland</td>
</tr>
<tr>
<td>Armasuisse</td>
<td>Integrated Military Telecommunications System; Tactical Radio Communication</td>
<td>Switzerland</td>
</tr>
<tr>
<td>Transpennine Express</td>
<td>Interactive Helppoints at railway stations</td>
<td>UK</td>
</tr>
</tbody>
</table>
SECURITY COMMUNICATION
Summary
SECURITY COMMUNICATION: KEY INVESTMENT HIGHLIGHTS

**Growing markets**
Increasing investments in security/emergency communication

**Attractive offering**
Advanced technologies and platforms for the addressed markets, potential to enter new segments

**Installed base**
Long term customer relations and strong local positions, mainly in Switzerland, Austria and Finland

**Go International**
Further growth potential

**Efficiency**
Significant potential, 1st milestone achieved
ASCOM MOBILE TEST SOLUTIONS
THE GLOBAL LEADER IN MOBILE USER EXPERIENCE TESTING

Beat Gerber, Managing Director Ascom Mobile Test Solutions
AGENDA

- MOBILE TEST SOLUTIONS - Key Facts, Customer Base, Market
- ACQUISITIONS 2008: Argogroup and Comarco Wireless Test Solutions
- SYSTEMS / PRODUCTS – Demonstration
THE COMPLETE USER EXPERIENCE ASSESSMENT

Think Like a User – Test Like an Engineer

Testing and Monitoring from the Mobile User’s Perspective Content, Services and Network Transmission Quality
MOBILE TEST SOLUTIONS – VISION AND BIZ TARGET

BE THE WORLDWIDE LEADER FOR CELLULAR USER EXPERIENCE TESTING (DRIVE / WALK / STATIONARY / IP)

Be a best in class company and maintain excellent customer relationships with highly motivated employees and partners

2007
80 employees

2008
125 employees incl. Argo

2009
180 employees incl. Argo + Comarco WTS
MOBILE TEST SOLUTIONS – KEY FACTS 2009

- As a Supplier of advanced State-of-the-art Quality of Service (QoS) benchmarking and diagnostic systems to the cellular telecom industry, we help our customers
  - to know their quality of service and guarantee quality and performance of service delivery
  - to know their competitiveness and reduce their churn and
  - to assure their revenue stream

- Key is
  - Innovation leadership, experience & 'knowledge database'
  - Best-in-class company with excellent customer relationships
  - Worldwide coverage & critical mass
MOBILE TEST SOLUTIONS – KEY FACTS 2009

- BU Head Quarter in Solothurn (Switzerland) – 19 local offices worldwide
- More than 16 years activities in Mobile Network Quality testing
- 180 employees (130 in Drive Test / 50 Stationary Test)
- GSM-A, ETSI, ITU and EFQM member
- ISO 9001:2000 certified
- EFQM multiple “Recognized for Excellence”
- 22 patents in Mobile QoS testing
- High tech awards won
MOBILE TEST SOLUTIONS – CUSTOMER BASE

Network Operators, Service Providers, Consultants, Regulators and Equipment Manufacturers worldwide.
Market leader in key GSM / GPRS / CDMA / UMTS markets.

Europe – 120 customers
Middle East – 18 customers
Africa – 20 customers
Asia – 35 customers
Americas – 20 customers
MOBILE TEST SOLUTIONS – CUSTOMER BASE

15 of the World’s Top 20 Mobile Operators use Ascom’s Mobile Test Systems
MAIN MARKET DRIVERS FOR MOBILE TESTING

- **Growth of Mobile users**
  - 4’108’000’000 users 80% GSM 10% CDMA
  - Data usage growth > 50% p.a.

- **Features & Applications**
  - Data rates growth in Mobile world > 1000 times in past 10 years (comparable to super-computer speed growth)

- **Network Infrastructure**
  - The growing variety of different Networks are increasing the complexity

- **Operators Competition**
  - Growing number of Operators & Handsets
  - Competition on Quality

**Mobile Lifestyle** has already started
- According Frost & Sullivan the market of Air Interface monitoring is **367 M$** and **growing**

- Our estimation is appx **340 M$** cyclical with an avg. CAGR of ca 4 %, price erosion p.a. of appx 10% included
TECHNOLOGY COVERAGE AND MARKET NEEDS

Features & Applications

Network & Air Interface technology

Speech
GSM 2G
IS95 / CDMA1X / 2000

GPRS 2.5G
iDEN
WCDMA 3G
EDGE
HSUPA 3.5G
WiMAX
HSPA+
LTE
Long Term Evolution → 4G

2010 / 11
Mobile content Value Added Services
- Facebook
- Banking

- Facebook
- Banking

Network & Air Interface technology

Features & Applications

HSPA+
LTE
Long Term Evolution → 4G
Example: VISUAL VOICEMAIL TESTING

Voicemail delivery requires a mix of voice, SMS and encrypted IP data to work.

Problem: possibility of interruption for one or more of these services.
Example: VISUAL VOICEMAIL TESTING

Alice leaves Jill a voicemail

Jill gets a voicemail from Alice

Solution: automate end to end testing.

Customer gets: data on availability, performance and diagnostics
Example: REPORTING AND ANALYSIS – What a user would see

- Go to Services
- My 3
- Check my usage
- Current spend
Example: REPORTING AND ANALYSIS – WAP Portal Test

These graphics show the content that a user would see for the 2 phones used:

**Sony Ericsson P900**

**Nokia 6230**

Note: some graphics have been hidden to hide confidential details.

User Experience is better for Sony Ericsson device.

WAP1 / WAP2 issue causes images not to be displayed.
IF A USER CAN DO IT, WE CAN MEASURE AND BENCHMARK IT

FIND PROBLEMS BEFORE CUSTOMERS DO
MOBILE TESTING CONTRIBUTES TO ASCOM’s PERFORMANCE

Reasons for Ascom’s Leadership

- Major investment in the development of high performance, multi-processor platform
- Continuous development of measurement and display software for cellular networks
- Adding expertise in radio / speech / video / contents testing
- Expanding sales / support channels, worldwide
- Acquisitions
ACQUISITIONS 2008: ARGO AND COMARCO WTS

“TO BE THE WORLDWIDE LEADER FOR MOBILE USER EXPERIENCE TESTING (DRIVE / WALK / STATIONARY / IP)”
## MARKET SEGMENTS and MAIN PLAYERS 2006 / 07

<table>
<thead>
<tr>
<th>Business Areas Products / Offering</th>
<th>Europe-Africa-Asia-Americas</th>
<th>Competition</th>
</tr>
</thead>
<tbody>
<tr>
<td>STATIONARY service &amp; content testing of mobile / fixed IP networks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BENCHMARKING (QoS) Drive-/ Walk-Test</td>
<td>ascom 90 M$ alliance</td>
<td></td>
</tr>
<tr>
<td>Network Roll-out &amp; OPTIMIZATION</td>
<td>140 M$</td>
<td></td>
</tr>
</tbody>
</table>

Reach > 30% in the Benchmarking segment

2006

2007

STEP 1
STEP 1 – ALLIANCE WITH COMARCO – VERY SUCCESSFUL

Comarco Wireless Test Solutions

Alliance established end 2006

AT&T, Verizon USA
Rogers, Canada
Claro PRT, Puerto Rico

Ascom Mobile Test Solutions

GSM / UMTS

CDMA2000 / Scanners

Strategic Alliance in Cellular Testing / Winning major customer projects
MARKET SEGMENTS and MAIN PLAYERS 2007 / 08

Business Areas

- STATIONARY service & content testing of mobile / fixed IP networks
- BENCHMARKING (QoS) Drive-/ Walk-Test
- Network Roll-out & OPTIMIZATION

Products / Offering

- STATIONARY
- BENCHMARKING
- Network Roll-out & OPTIMIZATION

Geography

Europe-Africa-Asia-Americas

Competition

- argogroup
- JDSU
- SwissQual
- Anite
- ERISSON
- Agilent Technologies
- KEYNOTE Sigos

Reach > 25% (40% in the Benchmarking segment)

STEP 2

80 M$

100 M$

150 M$

2006

2007

2008

22% Market share
STEP 2 – ASCOM ACQUIRED ARGOGROUP IN MARCH 2008

ARGO BRINGS:

- Expertise in mobile data contents testing
  - Ensure web page contents, advertisements, logos, E Mails, ring tones etc arrive correctly
- End-to-end Monitoring
  - SLA testing / alarming / reporting
- Revenue assurance
  - In large scale use in US Tier 1 carriers and European customers, stops revenue leaks
- Roaming tests
  - Check / report on correct roaming operators, worldwide

Combined with MTS systems to gave the unique Symphony range
MARKET SEGMENTS and MAIN PLAYERS 2008 -10

Business Areas
- Products / Offering
- STATIONARY service & content testing of mobile / fixed IP networks
- BENCHMARKING (QoS) Drive-/ Walk-Test
- Network Roll-out & OPTIMIZATION

Geography
- Europe-Africa-Asia-Americas

Competition
- argogroup
- ascom
- Comarco
- JDSU
- SwissQual
- Anite
- ERIsson
- Agilent Technologies

Reach > 35% (50% in the Benchmarking segment)

2006
- 15% Market share

2007
- 22% Market share

2008
- approx. 30% Market share

2009
STEP 3 – ASCOM ACQUIRES COMARCO WTS END 2008
COMARCO WTS BRINGS:

- Expansion in Geography – North- and South America
  - Established Customer relationships and local presence
  - Customers’ contact remains unchanged – sales, partnerships
  - All Comarco WTS customer projects transferred to Ascom

- Specific Know how & expertise
  - US technologies, e.g. CDMA
  - Cost optimized Hardware & Scanner design
ASCOM‘s MARKET SHARE 2008
(estimation Ascom)
ASCOM’s GLOBAL PRESENCE

Mobile Test Solutions serves more than 200 customers in more than 75 countries
SUMMARY

Ascom invests in Strategic Business Mobile Test Solutions

Unique product range:
Radio / Service & Contents / Walk / Drive / Stationary Testing

User Experience Test Everything, Everywhere

Strong Worldwide Sales, Support, Customer Base

GREAT SYSTEMS – GREAT FUTURE – GREAT TEAM
SYSTEMS & PRODUCTS DEMONSTRATION

1. MONITOR MASTER Test Script and Flow
2. TESTING WITH A SMART PHONE
3. PRESENTATION ON GOOGLE EARTH
Analyzing and reporting tools

Benchmarking and monitoring systems

Measuring and testing equipment

Actual network
Pictures of a Customer’s Drive Test Car
THANK YOU!