<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presenter</th>
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<tbody>
<tr>
<td>16:00-16:05</td>
<td>Welcome</td>
<td>Thomas Seiler</td>
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<tr>
<td>16:05-16:25</td>
<td>Why u-blox is core</td>
<td>Thomas Seiler</td>
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<tr>
<td>16:25-16:40</td>
<td>Business update</td>
<td>Thomas Seiler</td>
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<td>16:40-16:45</td>
<td>ESG</td>
<td>Thomas Seiler</td>
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<tr>
<td>16:45-17:05</td>
<td>Financial update</td>
<td>Roland Jud</td>
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<td>17:05-17:20</td>
<td>Break</td>
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<tr>
<td>17:20-17:30</td>
<td>R&amp;D strategy</td>
<td>Andreas Thiel</td>
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<tr>
<td>17:30-18:10</td>
<td>Technology insights</td>
<td>Andreas Thiel</td>
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<td>18:10-18:15</td>
<td>Round-up</td>
<td>Thomas Seiler</td>
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<td>18:15-18:45</td>
<td>Q&amp;A</td>
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Disclaimer

This presentation contains certain forward-looking statements. Such forward-looking statements reflect the current views of management and are subject to known and unknown risks, uncertainties, assumptions, and other factors that may cause actual results, performance, or achievements of the Group to differ materially from those expressed or implied herein.

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Why u-blox is core
### u-blox at a glance

A market leader in positioning and wireless communication technology

#### Our business

- Global provider of leading positioning and wireless communication technologies
- Number one GNSS module supplier worldwide, with in-house positioning chip
- Enables OEMs to reliably locate and connect people and devices
- A fabless company owning the full IP focusing on R&D and customer relationships
- All manufacturing outsourced

#### Services

- Connectivity, Location, Security

#### Services Overview

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<tr>
<th>P</th>
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<tbody>
<tr>
<td><strong>Positioning</strong></td>
<td><strong>Cellular connectivity</strong></td>
<td><strong>Short range connectivity</strong></td>
</tr>
<tr>
<td>To locate the source of information</td>
<td>To connect over a wide area</td>
<td>To connect over short distances</td>
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Products comprised of chipsets, modules and data services
<table>
<thead>
<tr>
<th><strong>3</strong></th>
<th><strong>385m</strong></th>
<th><strong>1997</strong></th>
<th><strong>20.5 %</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Core markets</td>
<td>Revenue in 2019</td>
<td>Founded as a spin-off from ETH Zurich</td>
<td>of revenue invested into R&amp;D</td>
</tr>
<tr>
<td>Automotive</td>
<td>CHF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td></td>
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<tr>
<th><strong>7600</strong></th>
<th><strong>1/3</strong></th>
<th><strong>1000+</strong></th>
<th><strong>2007</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Customers served worldwide</td>
<td>of revenue</td>
<td>Employees 68% in R&amp;D</td>
<td>IPO and listed</td>
</tr>
<tr>
<td></td>
<td>AMER, EMEA, APAC</td>
<td></td>
<td>SIX:UBXN</td>
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</tbody>
</table>
u-blox today and tomorrow
Our value proposition endures

u-blox is in the right markets
IoT, autonomous driving and electric vehicles, Smart City and Industry 4.0 are megatrends shaping the world today.

u-blox will emerge even stronger after COVID-19
Solidly positioned to withstand the COVID-19 crisis and emerge even stronger.

u-blox’s markets are growing and accelerating
In an increasingly connected world, the number of applications across our markets will only continue to grow.
Why u-blox is core

Wireless connectivity is fundamental for IoT devices

Demand for wireless
Only wireless connectivity can deliver the capillarity for connecting billions of devices to the cloud

Technology develops rapidly
Wireless technology continues to become increasingly complex and most of our customers have little knowledge

Customers seek to minimize implementation risk
Wireless requires expertise for successful implementation, and outsourcing is the solution for an efficient go-to-market plan

u-blox delivers
Providing superior wireless connectivity solutions is our core function in the industry
Wireless is the superior method of connectivity
Ideal across applications: automotive, industrial, and consumer

• Only wireless can offer **interconnectivity** among devices
• Wireless is more reliable than cables – it is **self-healing and serviceable**
• Wireless is **cost effective** – only wireless technology makes cloud services feasible
• Wireless continues to **evolve** - strong technology progress in radio signals, signal processing and encryption
The importance of robust connectivity
Machine type communication requires powerful technology

Industrial use cases must be reflected in the basic solution concept
• Requires a solid design to meet the end application

Extremely low risk tolerance for errors in industrial use cases
• Typically used to manage important operational activity, such as fleet management

More complex operating schemes than with personal devices
• Desired functionalities include low power schemes, battery issues, remote upgrades

Qualification and certification is essential for reliable operation
• Standard to conduct thousands of individual tests for a new platform product to ensure robustness and high reliability
We provide a comprehensive “one-stop-shop” solution

Positioning and wireless communication technology bring things to the cloud

<table>
<thead>
<tr>
<th>From the customer’s perspective:</th>
<th>Services</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• A seamlessly integrated bundle of technologies leads to faster time to market</td>
<td>Connectivity, Location, Security</td>
<td></td>
</tr>
<tr>
<td>• Execution risk greatly reduced when working closely with one competent supplier</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Customer may be unable to create the desired solution on their own when dealing with several suppliers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• u-blox can deliver the desired combination of hardware components and services, and ensure that it will cooperate seamlessly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• No other provider has this capability</td>
<td></td>
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**Positioning**
To locate the source of information

**Cellular connectivity**
To connect over a wide area

**Short range connectivity**
To connect over short distances

Products comprised of chipsets, modules and data services
Technology leadership built over decades
Constant innovation and platform generation upgrades

Our innovation leadership stems from a unique set of attributes that would be difficult to replicate

- Deep IP pockets from long company history
- Focus on the most promising value proposals
- Deep-rooted spirit for stepping outside the box
- Culture that appreciates innovation
- R&D teams with broad know-how

Supported and driven by more than 20 years of in-house experience
## Competitive environment

### No other company offers the same solution space

<table>
<thead>
<tr>
<th>Large semis</th>
<th>Focus on smart phones and other high-volume products</th>
</tr>
</thead>
<tbody>
<tr>
<td>• ST Microelectronics</td>
<td>• Very broad product portfolio – driven by consolidation</td>
</tr>
<tr>
<td>• NXP</td>
<td>• Only chip offering</td>
</tr>
<tr>
<td>• Mediatek</td>
<td></td>
</tr>
<tr>
<td>• Qualcomm</td>
<td></td>
</tr>
<tr>
<td>• Broadcom</td>
<td></td>
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<table>
<thead>
<tr>
<th>Small semis</th>
<th>Specialized in few technologies</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Nordic</td>
<td>• Mostly chip offering</td>
</tr>
<tr>
<td>• Nordic</td>
<td></td>
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<tr>
<td>• Silicon Labs</td>
<td></td>
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<td>• Sequans</td>
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<table>
<thead>
<tr>
<th>Module makers</th>
<th>Produce modules based on reference designs provided by a semi supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Sierra Wireless</td>
<td>• No knowledge with respect to core IP and functionality</td>
</tr>
<tr>
<td>• Telit</td>
<td>• Only module capability</td>
</tr>
<tr>
<td>• Thales</td>
<td>• Only module capability</td>
</tr>
<tr>
<td>• Fibocom</td>
<td>• Only module capability</td>
</tr>
<tr>
<td>• Quectel</td>
<td>• Only module capability</td>
</tr>
</tbody>
</table>

### u-blox

- Focus on industrial and automotive applications
- Specialized in the IoT connectivity technology
- Chip and module offering
- Deep IP in wireless technologies
Reference case **Automotive**

Broad expansion of electronics content

- TCU (telematics control unit)
- Driver assistance
- In-car connectivity
- In-car navigation and entertainment
- V2X connectivity for car traffic safety

**Semis revenue growth mainly driven by automated driving (CAGR = 20%)**

Source: Gartner, UBS
Reference case **Industrial**
Strong growth of connected devices

**IoT connections growth rates 2019-2025 (CAGR)**

- Wide area/Cellular: 23%
- Short Range: 13%

**Figure 22: Cellular IoT connections by segment and technology (billion)**

- **2015**
  - Broadband IoT and Critical IoT (4G/5G)
  - Massive IoT (NB-IoT/Cat-M1)
  - Legacy (2G/3G)

- **2020**: 4.0
- **2025**: 6.0

*Note: Cat-M1 includes both Cat-M1 and Cat-M2. Only Cat-M1 is being supported today.*

*Source: Ericsson Mobility Report, June 2020*
Reference case Consumer
A wealth of smart devices

Navigation and tracking
Connectivity

Consumer IoT connections
growth rates 2015-2026 (CAGR)
Home, wearables, sports 15%

Source: Omida 2020
Business Update
Business update
Priorities continue to be driven by COVID-19 pandemic

Our Priorities

- Protect the health and safety of our employees while ensuring business continuity and efficacy
- Employees working remotely in most regions; in-person meetings possible again in certain APAC countries
- Teamed with manufacturing partners to ensure no production interruptions or impact to available capacity
- Initiated cost improvement measures totaling CHF 15 million in annualized savings
- Continue to follow local government guidelines while ensuring we are ready for a market recovery

Business Impact

- Little to no disruption to business operations worldwide
- Successfully serving customers, manufacturing products and fully managing R&D programs
- Customer relationships migrated to virtual meetings, engaging more often and with greater efficiency
- Strong focus on creation of new business opportunities as COVID-19 has accelerated demand in certain end markets for connected devices
- Adjusted production capacity to work through some inventory overswing through the remainder of 2020
COVID-19: No paradigm shift

IoT, autonomous driving and electric vehicles, Smart City and Industry 4.0 are megatrends driving our business

- Although business impacted in the near term, the megatrends driving growth and demand for our products will endure
  - Industrial customers continue to seek ways to drive efficiency and accuracy in their operations and businesses
  - Electronic content increase in automotive is driven by Electric Vehicle (EV) expansion and increasing environmental requirements (CO$_2$ emissions)
  - COVID-19 has, in fact, accelerated many of our markets
    - Industrial markets have an even greater desire to make products smart and connected
    - High touch consumer products such as fitness devices have experienced increased demand driven by the crisis
And strong rebound expected
Expanding business pipeline

- Optimistic for a rebound similar to the one following the financial crisis in 2010
- First strong signs are in APAC: Record bookings in Japan and Korea, mainly thanks to Automotive
- Solid project pipeline developing: Intensive customer engagements despite travel restrictions has accelerated the growth of new customer projects in our pipeline

Number of new customer projects, per month

*Through October 2020.
Update: Automotive

Substantial impact from COVID-19 due to production shutdowns; revenues recovering led by APAC and recent uptick observed in EMEA and Americas

COVID-19 Impact

• In H1 2020, revenue decreased to CHF 41.3m v. CHF 57.3m in H1 2019 (-28%)
• Rebound since September has occurred mainly in APAC (record bookings in Japan and Korea)
• Several ramp-ups help to counter-balance the decline

Expectations

• Volumes (registrations) returning to 2019 levels in Europe
• Autonomous driving remains in focus by OEMs
• Electronics content increasing with more complex system architecture in cars, and EV expansion strongly supported, particularly in APAC
Auto sales: Rebounding to historical norms
Volumes (registrations) recovering

Source: Bank Bär
Update: Industrial
Stable in H1 2020 with most application sectors continuing to grow

COVID-19 impact
• Revenue in H1 2020 was essentially flat at CHF 110.2m v. CHF 109.5m in H1 2019 (+1%)
• Stable with most application sectors growing, except for telematics
  • UAV ✓ ✓
  • Infrastructure, surveillance, security ✓ ✓
  • Automation, monitoring, sensor ✓ ✓
  • Medical, healthcare ✓
  • Macro, small & femto cell ✓
  • Metering ✓/-
  • Tracking, telematics --
• Trends driving growth in connected solutions continue, and in some cases, have accelerated due to COVID-19
Update: Consumer
Downturn from COVID-19 due to restrictions impacting outdoor and communal activities

COVID-19 impact
• H1 2020 revenue was CHF 12.8m v. CHF 14.6m (-13%)
• Downturn in several applications (e.g. cameras, watches) but fitness was positive in H1 2020

Expectations
• Recovery visible as lockdown restrictions have eased worldwide
• Several new applications for COVID-19 tracking are driving some growth
• Consumer applications represent relatively small part of our total revenue (7%)
ESG
(Environmental, Social and Corporate Governance)
How our products support sustainability
Connectivity and positioning are essential in achieving a greener infrastructure

Driving greener travel
Our JODY-W2 Wi-Fi and Bluetooth products are being used in an inductive electric vehicle (EV) charging initiative which promises to simplify this key aspect of EV ownership, and thereby drive adoption of zero-emission vehicles.

Safer and energy efficient communities
Our UBX-M8 GNSS chipset and SARA-R4 series cellular modems are being used in smart street lighting. This enables real-time fault-detection that leads to faster repairs, keeping communities energy efficient.

Reducing greenhouse gas emissions from central heating
Heating large buildings is a significant contributor to global greenhouse gas emissions. The SARA-R4 cellular range is at the heart of a globally available system that cuts energy waste from buildings.
ESG – why sustainability matters

Prioritizing sustainability results in value creation for all stakeholders in the long run

• Since 2012, u-blox has been a member of the United Nations Global Compact, the largest corporate sustainability initiative in the world

• The Internet of Things will make an exponential contribution to a more sustainable world and u-blox plays a key role in the innovation driving sustainability

• Sustainability is about maximizing the positive effect that we as a business can have, including our responsibility to be a good corporate citizen to our employees, business partners, communities and the environment
Our first sustainability report
In 2020, we published our first sustainability report detailing our commitment to these important initiatives

- Identified and prioritized the **topics most important to us and stakeholders**, and aligned them with the 17 United Nations Global Compact Sustainable Development Goals (SDG)

- The **5 u-blox sustainability pillars** are:
  - Business Ethics, Privacy and Security
  - Employees
  - Environmental Responsibility
  - Supply Chain Responsibility
  - Communities

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<thead>
<tr>
<th>Our 5 engagements</th>
<th>Supported SDG</th>
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<tbody>
<tr>
<td>Business Ethics</td>
<td>3, 5, 8, 16</td>
</tr>
<tr>
<td>Employees</td>
<td>4, 5, 8, 9, 11</td>
</tr>
<tr>
<td>Environmental responsibility</td>
<td>3, 12, 16</td>
</tr>
<tr>
<td>Supply chain responsibility</td>
<td>3, 12, 16</td>
</tr>
<tr>
<td>Community</td>
<td>3, 4, 5, 10, 11</td>
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Financial Update
Half year 2020: Summary financial results

Results reflect the impact of COVID-19 across our business

- Total revenues of CHF 174.0m, a decline of -8.7% (-5.6% at constant exchange rates)
  - APAC revenues declined by -2% to CHF 70.1m
  - EMEA revenues declined by -16% to CHF 51.7m due to the automotive markets
  - AMEC revenues decreased by -14% to CHF 48.9m as consumer and fleet management applications softened
- Despite decline in revenues, gross profit and EBITDA margins remain healthy
  - Gross profit margins increased slightly y-o-y driven by favorable product mix
- Impairment charge of CHF 74.1m due to refocusing of R&D programs and market delays in automotive

<table>
<thead>
<tr>
<th></th>
<th>H1 2020</th>
<th>H1 2019 adjusted ¹</th>
<th>Change 2020 to 2019</th>
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<tbody>
<tr>
<td>(CHF millions, except EPS and margins)</td>
<td>IFRS reported</td>
<td>adjusted ¹</td>
<td></td>
</tr>
<tr>
<td>Revenue (at constant exchange rates)</td>
<td>174.0m</td>
<td>174.0m</td>
<td>190.6m</td>
</tr>
<tr>
<td>Gross profit</td>
<td>79.0m</td>
<td>79.4m</td>
<td>86.1m</td>
</tr>
<tr>
<td>Gross margin (%)</td>
<td>45.4%</td>
<td>45.6%</td>
<td>45.2%</td>
</tr>
<tr>
<td>EBITDA</td>
<td>19.9m</td>
<td>24.1m</td>
<td>32.7m</td>
</tr>
<tr>
<td>EBITDA margin (%)</td>
<td>11.4%</td>
<td>13.9%</td>
<td>17.2%</td>
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¹) Excl. Share-based payments, impacts based on IAS-19, amortization of intangible assets acquired, impairments and non-recurring expenses

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<th>H1 2020</th>
<th>H1 2019</th>
<th>Change 2020 to 2019</th>
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<tr>
<td>(CHF millions)</td>
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<tr>
<td>Revenue by region</td>
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<tr>
<td></td>
<td>H1 2020</td>
<td>H1 2019</td>
<td></td>
</tr>
<tr>
<td>APAC</td>
<td>70.1m</td>
<td>71.5m</td>
<td>-2.0%</td>
</tr>
<tr>
<td>EMEA</td>
<td>51.7m</td>
<td>61.6m</td>
<td>-16.1%</td>
</tr>
<tr>
<td>AMEC</td>
<td>48.9m</td>
<td>56.6m</td>
<td>-13.6%</td>
</tr>
<tr>
<td>Others</td>
<td>3.3m</td>
<td>0.9m</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>174.0m</td>
<td>190.6m</td>
<td>-8.7%</td>
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<th>H1 2020</th>
<th>H1 2019</th>
<th>Change 2020 to 2019</th>
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<tr>
<td>Revenue by end market</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>H1 2020</td>
<td>H1 2019</td>
<td></td>
</tr>
<tr>
<td>Automotive</td>
<td>24%</td>
<td>30%</td>
<td>-27%</td>
</tr>
<tr>
<td>Consumer</td>
<td>7%</td>
<td>8%</td>
<td>-13%</td>
</tr>
<tr>
<td>Industrial</td>
<td>63%</td>
<td>58%</td>
<td>1%</td>
</tr>
<tr>
<td>Others</td>
<td>6%</td>
<td>4%</td>
<td>13%</td>
</tr>
<tr>
<td>Total</td>
<td>174.0m</td>
<td>190.6m</td>
<td>-8.4%</td>
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Big picture

Historical investment in R&D will enable us to move past current headwinds with competitive strength

• To Date
  • Focused on expansion of chip development across technologies over past 5 years
  • Building services business to further support base of products
  • Navigated through strong macro headwinds since 2018

• Looking ahead
  • Three new platforms released in 2020
  • Recurring service business taking traction, acquired Thingstream in 2020
  • Robust customer project pipeline
We create intellectual property
R&D priorities are balanced against positive free cash flow objectives

- Free cash flow is our core KPI
- **R&D intensity** managed to achieve positive free cash flow and balanced for continual building of innovative core Intellectual Property (IP)
- Our balance sheet represents our core IP in the form of capitalized R&D and represents the intrinsic value of u-blox
- Our IP is based on CHF 900m investment over the last 15 years
Intellectual property is our core asset
Balance sheet represents our core IP in the form of capitalized R&D

• Impairments of capitalized IP does not mean it has been completely written-off
• Most of our IP continues to generate cash flow
• Impairments are triggered by various reasons, including delays to market or an end-of-life product that is still being harvested
• Mostly, these reasons indicate that the IP is still in use and generating cash flow
• Capitalization and the rules for impairments are IFRS based accounting rules and do not necessarily reflect all realities

Input to modeling R&D cost:
• 45% capitalization rate
• Amortization lags capitalization by 2-3 years
• 9 years harvesting time
Recent revenue trends indicate COVID-19 low point may be in the past

- After strong start to 2020, revenue began declining in April, reaching a low point in August.
- Since August, revenue has increased each sequential month through October.
- Bookings (see right) are increasing meaningfully, although remaining relatively short-term as customers are holding little inventory.
Financial profile is solid
We are strongly positioned to withstand the impact of COVID-19

Resilient business model
• Strong gross margin performance reflects specialty products, which tend to demonstrate more traction even during market downturns
• Global business is diversified across geographic regions, products and end markets
• CHF is a natural hedge against USD (100% for COGS; 60% for OPEX)
• OPEX saving program in the amount of CHF 15m initiated with the aim to increase efficiency

Balance sheet strength
• Ample cash and liquidity: CHF 100.6m cash at H1 2020
• Bond refinancing to be determined in due time; net debt/EBITDA ratio is currently 0.3x
• Strong IP portfolio - no further impairments expected
Outlook

- Due to UK Takeover Code rules and the recent announcement of a possible offer for Telit Communications plc we are currently unable to provide an update on our earnings for FY2020
- We expect to be able to provide earnings guidance in the near future and will provide an update in due course
Acquisition criteria
Our M&A strategy

- M&A has always been a part of our long-term strategy; successfully closed 16 transactions to date
- Target must complement product portfolio and add service component with a strong industrial logic
- Purchase price to enable shareholder value creation based on conservative synergy calculation
- Only willing to do acquisitions at reasonable valuation
- Business model, management and culture an ideal fit for u-blox
- Specific areas where we would find a complementary fit:
  - Technology acquisition
  - Gain economies of scale
  - Expanding customer footprint and cross selling
  - Recurring revenue models

We maintain a continual stream of acquisition opportunities
R&D Strategy
u-blox proprietary wireless technology is unique

- **Long-term attitude:** Wireless chips and modules in the industrial and automotive markets have a 5-10 year life-cycle.
- **Core intellectual property (IP) re-used:** Between generations of products and across the product portfolio. Low risk of obsolescence.
- **Value-added services** based on our core IP in the end device.
- **Thorough verification and validation methods** assure robust products.
- **Advanced packaging and silicon technology** create energy saving products in small form factors.

15 R&D centers worldwide

800+ engineers

CHF 100m+ annual investment (2019)
R&D strategy
Creating value bottom-up

• Mixed signal competence: Analog radio and digital signal processing on **one piece of silicon** is our core technology and difficult to replicate

• **High software content:** The specific software can only be developed by experts. It makes up 70% of our R&D cost and is key to differentiation
Why do we do this?
Achieving sustainable competitive advantage and value creation

- We **derive a larger part of the value chain** because we deliver more:
  - Enhanced functionality
  - Lower cost of ownership
  - Added services
- We **increase margins** over the lifetime of the product
- **Independency** from 3rd party chipset roadmaps: Better fit to customer demand
- Customers take a **long-term commitment** with u-blox because of our control of core intellectual property (IP)
- **Better customer support** thanks to full insight and control

Gross margin continually expanding since market launch
Platform results (Chip and module)

Note: Sample based case
Product launches 2020

Broad expansion of solution capabilities will drive business growth

**Cellular communication**

**UBX-R5**
UBX-R5 LTE-M/NB-IoT chipset offers unprecedented wireless technology integration with built-in end-to-end security, making it ideal for mission-critical or long life-cycle IoT applications.

**Short range radio communication**

**JODY-W3**
Designed for the increasing number of wireless high-speed connections that will be required in vehicles.

**Positioning**

**M9**
The ultra-robust M9 technology platform will serve demanding automotive and high-end telematics applications.

**Services**

**Thingstream acquisition**
Enables u-blox to expand its services portfolio toward achieving unique silicon-to-cloud differentiation.

**UBX-R5 LTE-M/NB-IoT chipset**

**JODY-W3**

**M9**

**M10**
Leading edge GNSS platform for wearables and asset trackers, with small size and very low power consumption.
u-blox M10 just launched
All our very best creativity went to this new platform

- 35% smaller chip size
- 75% less power consumption without performance limits
- Increased availability with 4GNSS
- Knows the true position error with 95% confidence
- 65% better Super-efficient power save mode
- > 25% higher accuracy with weak signals and small antennas
**Big leap in Positioning**

We are adding our 10th generation of GNSS receivers

<table>
<thead>
<tr>
<th>Services</th>
<th>Connectivity, Location, Security</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>P</strong> Positioning</td>
<td>To locate the source of information</td>
</tr>
<tr>
<td><strong>C</strong> Cellular connectivity</td>
<td>To connect over a wide area</td>
</tr>
<tr>
<td><strong>S</strong> Short range connectivity</td>
<td>To connect over short distances</td>
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</tbody>
</table>

**Our brand new M10 GNSS platform**

- **M10 chip and module variants**
Cellular product center
Market trends
IoT continues growth, COVID-related shift in applications

COVID is accelerating IoT growth in some areas:

- Touchless/contactless experiences, remote monitoring and automation
- This means more need for edge computing and AI, further driving growth in sensor networks and connected devices
- IoT security becoming more critical to protect sensitive and confidential data
- Efficiency gains will eventually drive business continuity in post-COVID recovery

CAPEX-intensive investments may be postponed in the near term:

- 5G deployments may be slower than expected in a number of regions

Micromobility
Shared and owned single user transport to avoid crowded public transportation.

Connected Health
Demand for remote monitoring, telehealth and connected clinical devices.
Growth drivers
Ideally positioned across IoT applications and regions

- **Migration 4G and 5G**: Broad 5G-ready IoT portfolio covering both LTE-M and NB-IoT
- **High integration**: Introduction of combo modules with integrated GNSS support new compact applications
- **Secure data**: Cloud devices with root of trust and support of IoT-Security-as-a-Service
- **Recurring revenue**: Services that provide support over the lifetime of the product
- **New networks**: First LTE-M module certified to FirstNet, US network for first responders and public safety applications
R5 cellular chipset and module deployed to market
All major certifications achieved, for chip and module
R5: Worldwide testing and certification
Covering leading base station makers and carriers

Band 4, 5, 6
- Canada
  (Bell, Rogers, Telus)
Huawei (Bell, Telus),
Ericsson (Rogers)

Band 2 and 12
- USA (ATT)
  Ericsson (Dallas, San
  Diego), NSN (New York,
  Chicago, Seattle)

Band 4 and 13
- USA (Verizon)
  NSN (Dallas TX),
  Ericsson (Irvine -
  San Diego CA),
  Samsung (Boston MA)

Band 4
- Mexico (ATT Mexico
  and Telecel) Huawei

Band 3, 4, 28
- Brazil (Claro, Vivo)
  Ericsson, Huawei

Band 20
- Germany
  (Deutsche Telekom)
  Huawei, Ericsson

Band 20
- Belgium (Orange)
  Huawei

Band 20
- France (Orange)
  Ericsson

Band 20
- Switzerland
  (Swisscom) Ericsson

Band 3, 20
- Spain (Orange,
  Telefonica)
Huawei, Ericsson

Band 20
- Poland
  (Orange)
  Huawei, Nokia

Band 20
- Sweden
  (Telefonor)
  Huawei

Band 20
- Japan
  Ericsson/Huawei/NSN/
  NEC/Fujitsu

Band 1, 10
(DoCoMo), 1, 8
(Softbank),
15, 21
(KDDI)

Band 3
- Taiwan
  (Chungwha
  Telecom) Ericsson

Band 5
- South Korea
  (SKT) Samsung

Band 28
- Australia
  (Telstra)
  Ericsson

Band means the frequency band prevailing in the respective area.
Application 1: NetModule

- NetModule is a leading manufacturer of communication products for M2M, Telematics and IoT
- For their automotive gateway platform they chose u-blox’s:
  - TOBY-L2 cellular module,
  - NEO-M8L GNSS receiver with dead reckoning, and
  - JODY-W1 Wi-Fi module (in some products)

“The geographic proximity and the exceptional quality and reliability that one could expect from a Swiss enterprise certainly influenced us in selecting u-blox as our technology partner for this product platform.”
Jürgen Kern, CEO of NetModule
Application 2: Leikr

Wearable hub for eHealth

- Smart medical watch that acts as a wireless gateway, channeling data from other medical devices to the cloud
- The Leikr smart medical watch helps track all kinds of biometric data, including blood pressure, blood glucose, heartrate, stress levels, and EKGs
- Leikr chose u-blox’s:
  - NINA-B3 short range module
  - ZOE-M8 GNSS receiver module
  - SARA-R5 cellular module

Collects and transmits patient data
Cellular priorities

• Expand leadership in LTE-M with UBX-R5 chipset
• Transition of IoT applications to 5G
• Create more value with combo solutions and Services
• Build next generation silicon
Positioning product center
Market trends
Highly reliable and precise tracking and navigation

- New solutions to limit virus spread with drone delivery
- Ramp up in e-bikes and e-scooters as healthy commute to work alternative
- Growing interest for stable network connections as more people work from home
- Continued trend for accurate and long battery life fitness tracking
- Growing interest in reliable people tracking solutions for contact tracing
- Acceleration in IoT increasing demands for more remote monitoring and automation
Growth Drivers
Positioning and timing key to reliable infrastructure

• High precision for automated operations
  • Facilitating autonomous vehicles
  • Paving the path to a smart city

• Highly precise timing for telecoms
  • Enables 5G infrastructures to meet future demands
  • Expansion to new network types

• Super low power
  • Continued strong expansion of wearables
  • Very long operation time, also with small batteries
Application 1: Robotics
Husqvarna – GNSS technology for autonomous robots

- “Husqvarna is the undisputed global market leader in robotic lawn mowers”
- Husqvarna robotic lawnmower with GNSS solution, and connectivity
- Our broad GNSS portfolio offer great customer value
- Our products enable a high precision satellite-based lawnmower with
  → **higher productivity** and
  → **lower** installation costs

«*u-blox is recognized for their experience with the GNSS module and competence in that area.*»
Anders Johansson, CTO of Husqvarna
Application 2: Autonomous cars
Functional safe technology at the core

• Connectivity to the cloud combined with edge computing allows for solutions in autonomous control
• High precision and functional safety are key to such solutions
• u-blox has invested into this space for many years and will continue to expand its leadership

Source: www.carmagazine.co.uk, Sep 2020

Advanced Driver Assistance Systems (ADAS) assisted driving
Positioning priorities

• Expand market share with new M10 for consumer and tracking applications

• Build up economies of scale with new M10 platform

• Strengthen leadership in high precision market

• Build up strong position for ADAS 2+ solutions and ramp up ADAS 3+ platform
Short Range Radio product center
Market trends

COVID impact

- Higher volumes in **fitness** home equipment
- Acceleration in **eHealth** use cases
- New solutions to limit virus spread (e.g. tracking)
- Strong 2-wheeler market – from shared to owned

Advancement in introducing **Wi-Fi 6** and electrification

- Growing need for **EV charging** infrastructure
- Growing interests in **indoor** tracking and location
- Shift towards **open OS** software base
Growth drivers
Delivering today and preparing tomorrow

- **Bluetooth as mass market technology**: wide range of Bluetooth low energy modules and strong support for open OS ecosystem
- **Wi-Fi for today and tomorrow**: successful launch of Wi-Fi 6 modules addressing both industrial and automotive
- **Market outreach**: go-to-market partnership for untapped opportunities and stronger global distributors channels
- **Cloud connection**: seamlessly through services
- **Indoor positioning**: gained expertise and investment in technologies
Application 1: Industry 4.0
Sulzer – From pumps to service revenues

• Treon’s sensors measure vibration on Sulzer’s pumps and send this data to the cloud via Treon’s gateway (incl. NINA-B1 and SARA-R4) for predictive maintenance.

• Seeing strong investment into Industry 4.0, e.g. digital transformation:
  • Adding services to pure product sales
  • Shifting of business model to recurring revenues

• Multiple successes with high profile companies in Europe

Monitoring vibration on pumps
Application 2: e-bike
Modmo – When e-bikes replace cars

• Featuring u-blox GPS technology with dedicated 4G data connection for location tracking and security:
  • Real-time location uploaded to a cloud server and retrieved from a mobile phone via cellular connectivity (LARA-R211)
  • Locking and unlocking e-bike with mobile phones via Bluetooth low energy (NINA-B111)
  • Connectivity handled in Thingstream platform

“The reason we chose u-blox was because of its high quality, which raises the reliability of our product and adds value to the functionality of the smart bike,” Jack O’Sullivan, Founder at Modmo.
Short Range Radio priorities

- Expand into the high-performance applications
- Add on next releases in SHO standards
- Gain strong traction with (indoor) positioning
- Expand services offering with secure connectivity
Services product center
Markets Trends
Why services shape future business

IoT adoption is part of a broader cultural change to optimize productivity and secure the business and operating environment:

- Reliable and robust connectivity is critical
- Services are in high business focus: They are perishable products
- Businesses are increasingly converting to service-based models

COVID impact

eMobility
Demand for electrical vehicles such as eBikes, eScooters and electric wheelchairs.

Connected eHealth
Demand for remote monitoring, telehealth and connected clinical devices.
Growth drivers
Strong expansion of IoT requires more robust solutions

- **Service content increasing in most application segments** – connectivity a generic pre-condition
- **Many new customers have little experience in cloud connectivity** – need for out of the box connectivity
- **Edge computing** - complementary features at the edge of the cloud
- **High expectations** of availability and life-time maintenance
- **Data security consciousness** - Security services is a recurring need
An alert activates in the product and sends a message to Thingstream system to notify the user for action.
Application 1: Bridgit Home Support Hub

Upstream Health - E-health increasing wellbeing

- Real-time **medical and behavioral home monitor** that measures more than 40 data points
- Patients can live more **safely** and **independently** in their homes
- With the MQTT Anywhere service, u-blox’s **Thingstream** platform automatically connects to **remotely and securely collect and transmit data**

Medical and behavioral home monitor
Application 2: Cooler system
Largest brewer AB InBev stay cool in South Africa

- u-blox’s IoT connectivity solution supports AB InBev with a Fridgelogic Connected Cooler system
- The solution enables AB InBev to track and monitor the temperature and location of its coolers and fridges

Ajay Lalu, Director, CIRT, said: “Thingstream provides us with the confidence that a cellular connection will always be maintained, without a guaranteed connection IoT, solutions just fail. Thingstream’s connectivity platform is unique in its ability to not only ensure connectivity but also output IoT messages in a way that can be ingested for real-time interpretation.”

The AB InBev refrigerator
Source: https://www.itweb.co.za/content/dgp45MaGMRvX9i6, 2019
Services priorities

- Timely expansion of Thingstream services delivery platform
- Roll-out new services
- Increase recurring revenue to double digit percentage of revenue
- Make solutions unique and differentiated
Summary – round up
Takeaway: Positioned to thrive

Our long-term strategy and focus remains unchanged

• The secular trends propelling the growth of positioning and wireless technology in automotive and industrial applications will continue

Leader in positioning and wireless connectivity solutions

• Offering a unique, comprehensive solution offering that no other company can provide
• Our IP portfolio reflects our long history of R&D know-how built over decades of experience
• New product platforms paving the way for expansion: three new Positioning platforms in market, strong traction R5 based LTE connectivity, building recurring revenue segment of the business

Well positioned to capitalize on a market recovery
u-blox today and tomorrow

Our value proposition endures

u-blox is in the right markets

u-blox will emerge even stronger after COVID-19

u-blox’s markets are growing and accelerating
Thank you for your attention