u-blox

# Sustainable progress with ample potential

The u-blox Sustainability Report 2021

# 1#
# About this report

The 2021 u-blox annual sustainability report serves as a summary of many of our global business activities and ongoing sustainability efforts from September 19, 2020, to March 1, 2022. Our first annual sustainability report was published on September 18, 2020.

As a signatory of the United Nations Global Compact (UNGC) since 2012, this sustainability report reaffirms our commitment to and has been prepared in accordance with its 10 principles and the 17 United Nations Sustainable Development Goals (UN SDGs).

The u-blox sustainability strategy is based on these five pillars: Business Ethics, Employees, Environmental Responsibility, Supply Chain Responsibility, and Community. We report on the policies and activities in each pillar and set out our goals and progress related to the Environment, Social, and Governance (ESG) issues within each pillar every year in our annual sustainability report.

# 2#
# u-blox at a glance

- Internet of Things (IoT) technology leader
- Serving over 12,000 customers worldwide
- 2021 revenues of CHF 414.1 million
- 3 key markets: Automotive, Industrial, Consumer
- Listed on SIX Swiss Exchange since 2007
- 1,100 employees worldwide
- 31 locations across 5 continents

- 17 R&D centers
- Signatory since 2012 to the United Nations Global Compact and 10 principles
- Signatory since 2020 to the GSMA Digital Declaration - a set of aspirational principles to guide activity in the digital age to build a sustainable and secure digital future

As of March 1, 2022

# Our value proposition



**Shareholders**
Our strategic silicon-to-cloud strategy has progressively driven revenue. Our CAGR reached 12.5% from 2007 - 2021 and helped us create value for our shareholders, employees, partners, and the communities worldwide within which we operate.



**Customers**
Unique silicon-to-cloud solution offering, combined with our Swiss tradition of restless technological innovation, precision, and quality.



**Stakeholders**
Our commitment to sustainability and protecting the planet, engaging in community-based sustainability projects around the world, the 10 UNGC guiding principles, and the 17 UN Sustainable Development Goals.

## Our values

To create products and services that enhance global sustainability – and produce them in a genuinely sustainable way – everything we do is founded on three core values.

Firstly, we are **innovative**, investing heavily in R&D to push the boundaries of what technology can enable. Secondly, we are **restless**, always looking to do more and be better, across every aspect of our business. And thirdly, we are **reliable**, meaning our customers can trust our products and services to underpin theirs.

These values provide a framework for growth that is both profitable and sustainable, enabling us to create commercially attractive products that genuinely make a positive difference.

### Caring for our people throughout the pandemic

In 2020, when The World Health Organization (WHO) declared the Covid-19 outbreak a Public Health Emergency of International Concern, u-blox set up a Covid-19 Task Force led by our global and local human resource (HR) teams. A pandemic risk level framework based on current WHO and local and regional government pandemic guidance was developed for each country where u-blox employees are present.

### Frequent, transparent communication

Our global HR team, with representatives from each country, meets on a weekly basis to address current risk levels and make sure u-blox staff have the latest information available.

### Concern for each other with no site outbreaks

Throughout the pandemic, u-blox employees around the world have demonstrated their concern for each other. When an individual is infected, incidence management is led by the local HR and site management. With transparent communication, while respecting the confidentiality and privacy of the individual, co-workers are informed about any potential exposure to Covid by a fellow staff member. Fortunately, to date, with a very high level of understanding and support - u-blox has not experienced a Covid-19 outbreak at any of its global sites.

### Resilient, creative, and productive

We were worried at the onset of the pandemic that resilience could be an issue and that innovation and productivity could be negatively impacted. We have been pleasantly surprised that our teams are resilient and feel accomplished because they know even during a pandemic, they can keep u-blox creative, productive, and thriving.

# 3#
# Foreword by our CEO

**With renewed commitment and sustainable progress**
Last year we published the inaugural u-blox sustainability report with the promise to return this year with an update on our progress.

Throughout these challenging times, our commitment to doing business sustainably remains steadfast. u-blox employees across the world, together with our shareholders, innovative customers, manufacturing, and other partners, continue to progress to a more sustainable future.

In 2021, we renewed our Global Reporting Initiative (GRI) Materiality Analysis to identify and prioritize the areas where u-blox can make a meaningful economic, environmental, and social impact - areas that are important to and highly influence the decision-making of u-blox and our stakeholders. Coupled with the United Nations SDGs, the results shaped our sustainability strategy.

The u-blox sustainability strategy is based on five pillars that guide our culture, behavior, and decision-making: **Business Ethics, Employees, Environmental Responsibility, Supply Chain Responsibility, and Community.**

**Making a meaningful contribution together**
We believe it is critical that we do business with integrity, care for our employees, protect the environment, contribute to communities, and work closely with manufacturing and supply chain partners who respect our ESG values and operate within international regulatory frameworks with sustainability best practices.

We serve society by providing life-enhancing products, many of which optimize resource consumption and reduce $CO_2$ emissions, extend access to healthcare, empower the disabled, and reduce social isolation for older people and those who are ill.

Implemented by our innovative customers and partners around the world across thousands of applications and millions of devices – together, we are making a meaningful contribution to a more sustainable future.

**On a journey with no finish line**
We know there is much more we can do as we navigate together with our stakeholders this journey of sustainability. We look forward to sharing our continued progress with you over the coming years.

Thomas Seiler,
Chief Executive Officer

# 4#
# 2021
# Highlights

u-blox saved 60,480 tons of CO₂ over 10 years through ADES in Madagascar

Fifteen-year-old Jan-Ole invented a 'Klimabox' for his high school classroom

We extended the number of chips produced on one wafer by a factor of 3 saving 66% in energy and materials

NaviBlind enables visually impaired people to navigate independently

91% of our modules are produced with renewable energy

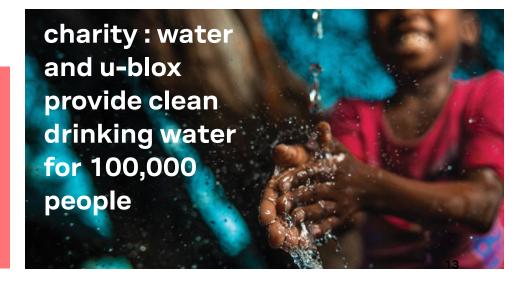2,569 young deer were saved from a painful death

**1,500 students attended 20,000 days of school across Europe thanks to No Isolation's AV1 robotic avatar**



**336 children were fed and educated in Ghana in 2021 at Mettoh school funded by u-blox since 2013**

**The India Mark II hand water pump developed by charity: water has rolled out across Uganda, India, and Ghana utilizing SARA-U201 cell modules and MAX-8C GNSS modules donated by u-blox**
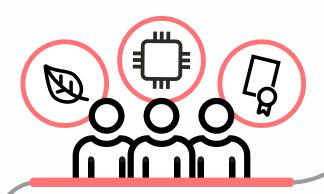
**94% of employees trained on u-blox Code of Conduct**

**charity : water and u-blox provide clean drinking water for 100,000 people**

# 5# Our business model
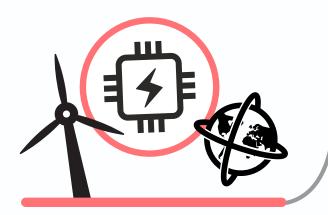
**The u-blox value chain**
Creating value at u-blox begins and ends with our customers. Led by our dedicated employees, it includes our valued manufacturing and distribution partners and is done with a spirit of innovation, precision, quality, and respect for sustainable business practices.

## 2 MANUFACTURING

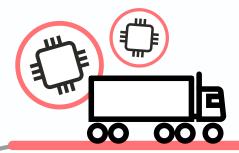**Transparent and binding Environmental Management System (EMS)**
As a fabless company, we are committed to ensuring u-blox products are produced responsibly and work exclusively with suppliers who embrace the environmental compliance and governance of our transparent and binding Environmental Management System and hold ISO 14001 certification. We adhere to international regulations and standards that restrict and control hazardous substances, e.g., RoHS, REACH, Conflict Minerals, and ELV, and aim to enforce these standards throughout our supply chain. All u-blox partners are expected to operate in line with our Supplier Code of Conduct. This is based on the Responsible Business Alliance (RBA) Code of Conduct.

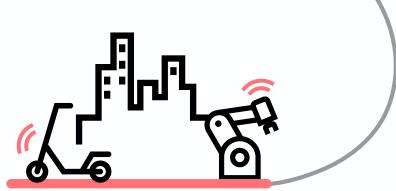## 1 PRODUCT RESEARCH & DEVELOPMENT

**Designing to last**
At u-blox, we believe that component longevity makes sense. The u-blox chip team designs for zero defect, robust life span, optimal form factor, and minimum energy consumption. Sustainability is good for our customers, their customers, and better for our planet.

## 3 SALES AND DISTRIBUTION

**Partnership and trust**
Our products are marketed worldwide through 18 of our locations and a global network of trusted distribution partner companies.

## 4 PRODUCT INTEGRATION AND END USE

**Making a meaningful contribution**
Our products are then incorporated into our 12,000+ customers' products across our three key markets: automotive, industrial, and consumer, most of whom are making a meaningful, sustainable contribution to the environment, safety, health, and communities.
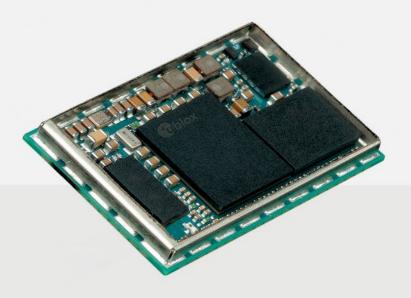
**Our people and the environment**
We protect the health and well-being of our people and are equally concerned about the health and well-being of our manufacturing partners' employees. Our Supplier Code of Conduct is aligned with international standards Responsible Business Alliance (RBA) and based on internationally agreed upon principles.
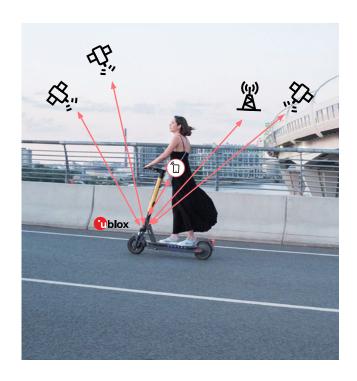
To minimize our indirect impact on the environment, we must continue to work closely with our suppliers. We will continue to partner exclusively with our top-tier manufacturer partners with leading environmental compliance and governance systems in place.

# 6# Products, services, and solutions



We serve the dynamic automotive, industrial, and consumer markets where wireless communication and location information are highly valued and in demand. u-blox is one of the few companies able to offer the essential connectivity technologies (positioning, cellular, and short range) optimized with services from one company.

Our smart and highly reliable solutions, services, and products make it possible for people, vehicles, and machines to determine their precise position and connect wirelessly over cellular and short-range protocols to the cloud.

"Market shapers demand multiple core technology solutions delivering continuous innovation, high performance, and reliability from one company all well bundled in one solution package."

"Implemented by our innovative customers around the world across thousands of applications and millions of devices – together, we are making a meaningful contribution to sustainability."

**Global megatrends expand our markets**
Positioning and connectivity are essential elements for a smart connected world. Although digital transformation and urbanization have been driving growth within IoT for decades, we now see demographic and social change combined with climate change and resource scarcity causing market expansion as innovators look to solve many of the world's complex challenges through IoT.

**The density of IoT is increasing, as is our market share**
We see several trends developing within our top markets. Namely: the scope of applications is increasing and enlarging our attainable markets, while the use cases have become diversified, demanding more sophisticated solutions with more functionalities, smaller footprints, and lower energy consumption. As IoT devices and applications expand within each of our key markets – so does our share of revenue.

# Responsible products

Implemented by our innovative customers around the world across thousands of applications and millions of devices – together, we are making a meaningful contribution to sustainability. Many of our solutions are used across a wide variety of applications to optimize resource consumption, reduce $CO_2$ emissions, extend access to healthcare, empower the disabled, and reduce social isolation for older people and those who are ill.

**Optimizing individual vehicle route/traffic management**

**Optimizing the maintenance and life span of remote community water pumps to keep the tap flowing for thousands of villagers**

**Empowering visually impaired people to walk independently**

**Enabling smart micromobility solutions**

**Advancing vehicle driver assistance systems for safety**

**Connecting children who are unable to attend school to their classrooms and classmates with robotic avatars**

**Optimizing agriculture to reduce water and pesticide consumption while helping to prevent food scarcity**

**Optimizing vehicle fleet management and transport**

**Optimizing sustainable building and site management**

**"The use of our products immediately generates a meaningful net gain for the environment because positioning information optimizes driving routes and driving behavior over the entire lifetime of our product."**

**Designing products for a more sustainable world**

The IoT industry is poised to make an exponential contribution to a more sustainable world. As a member of this critical ecosystem, u-blox continuously develops chips and modules that deliver the right balance of capability, form factor, energy consumption, and a robust life span, further reducing $CO_2$ emissions.

The manufacturing of a chipset for our positioning products typically creates almost 47 grams of $CO_2$eq. Most of the use cases for our products are mobility applications. Suppose we assume that most of this mobility is driven by hydrocarbon fuel. In that case, the $CO_2$ footprint of our product corresponds to as little as a few kilometers of driving a vehicle.

**Supporting older people who live alone with AgeTech**

**Optimizing sustainable management of cities**

**Optimizing manufacturing and logistics**

**Protecting vulnerable wildlife with precision GPS**

**Optimizing energy generation and reducing energy waste**

**Delivering vaccines to remote, hard to access communities**

**Optimizing water generation and reducing water waste**

**Optimizing healthcare technologies and environments**

Thus, the use of our products immediately generates a meaningful net gain for the environment because positioning information optimizes driving routes and driving behavior over the entire lifetime of our product.

**Designed and manufactured to last**
At u-blox, we believe that component longevity makes sense. Many of our customers' products are manufactured to last and remain in use for more than a decade. Components, therefore, need to be robust, easy to maintain, and, where required, continue to evolve with Firmware Over The Air (FOTA) after they leave the factory. Sustainability is good for our customers, good for their customers, and better for our planet.

**"At u-blox, we believe that component longevity makes sense. Many of our customers' products are manufactured to last and remain in use for more than a decade."**

**Designing a research and development process for a more sustainable world**
Long before our products are shipped to market, the u-blox R&D team has invested significant IP and sustainable consideration into the value chain with product design, wafer optimization, testing, and assembly.

- **Chip design:**
The u-blox chip team designs for zero defect, robust life span, optimal form factor and minimum energy consumption.

- **Wafer optimization:**
Through an extensive miniaturization project in 2021, we have extended the number of chips produced on one wafer by a factor of 3. We now produce 3 times as many components with the same amount of silicon, precious metals, and energy, effectively saving 66% on energy and materials. We have also designed our manufacturing process to use the minimum layer of metallization and implant options.

- **Wafer testing:**
We test both hot and cold to screen any potentially defective parts as soon as possible. A considerable amount of the energy used in the semiconductor manufacturing process is used for testing each chip. We scrap as early as possible so that only functional units continue through the manufacturing process. We save energy by not unnecessarily assembling or transporting parts that will be scrapped.

**"Through miniaturization, in 2021, we tripled wafer capacity - saving 66% on energy and materials."**

- **Assembly:**
The u-blox chip team has designed our robust products to rely on simple package technology, i.e., quad flat no-lead package (QFN), which does not require a substrate. We have also moved from gold wire bonding to copper to optimize environmental impact further.

- **Transportation:**
We minimize transport from wafer-tester-stock throughout the entire manufacturing process and perform the final test precisely at the exact location where we have our stock to avoid the environmental impact of additional transportation.

u-blox engineers continuously collaborate with our suppliers to find innovative ways to improve and adopt new manufacturing technologies to optimize energy, water, and materials used while minimizing waste to protect the environment as much as possible during the production process.

# Guatemala's rain engine – ioroots

Water is one of our most valuable resources. Globally 85% of water used is used for agricultural purposes. Unfortunately, more than fifty percent of that water is wasted due to inefficiency and imprecise irrigation. Proper use of water allows the farmer to obtain better harvests, which results in larger profits. But, more importantly, it contributes to greater food security for humankind.

Guatemala based ioroots uses u-blox IoT Communication-as-a-Service to greatly reduce the operational complexities of collecting rain gauge data from anywhere in the world regardless of how remote.

**"This is a blueprint of how we are going to operate in the future, says Juan. With 80% of the risk in agriculture due to either too much rain or not enough, we must better manage our freshwater supplies."**

When Juan called the first time, it was October 2018, and Neil Hamilton, u-blox Global Head of Service Sales, was out walking his dog. Given Juan's enthusiasm for our technology by the end of the call, Neil was not surprised when Juan arrived in London three months later to better understand the overall solution on offer in person. With a decade in telecommunications behind him, Juan understood the potential of a MQTT Anywhere IoT communication service operating with over 600 cellular networks across 190 countries.

Upon his return to Guatemala City, Juan met Juan José and Alejandro Vila, owners of one of the largest family-owned sugar companies in Central America. Together they founded ioroots to leverage the promise of IoT for agriculture, allowing farmers to monitor moisture in real -time and sustainably address both water and food security.

Today ioroots sensors let farmers know how much water they have in their soil, empowering them to make sound business decisions about irrigation, increasing crop yields, and optimizing their water footprint.

ioroots is welcomed by both small farms and large agricultural brands across Central America for its simple, easy, and low-cost deployment and operation. Providing stable connectivity with no connectivity costs, ioroots customers

don't have to worry about connecting anything, and the data is transmitted to their servers 24/7 in real-time. ioroots data translates into visual maps and data charts identifying rain intensity down to the square meter. In addition, with freshwater becoming increasingly scarce and expensive, ioroots sensors tell them when to irrigate and when to stop; and how much they are spending or saving on water.

Meanwhile, Juan, Alejandro, Juan José, and the ioroots team are amassing a large dataset about the behavior of rain. By working with the largest sugar mills in Guatemala to place ioroots sensors at high-density intervals across 125,000 hectares of sugar, they have been able to capture, with a high level of accuracy, rain and moisture pattern data as well as solar radiation, wind speed, and temperature. The plantations' cost savings on water and fertilizer have already paid for the investment in sensors.
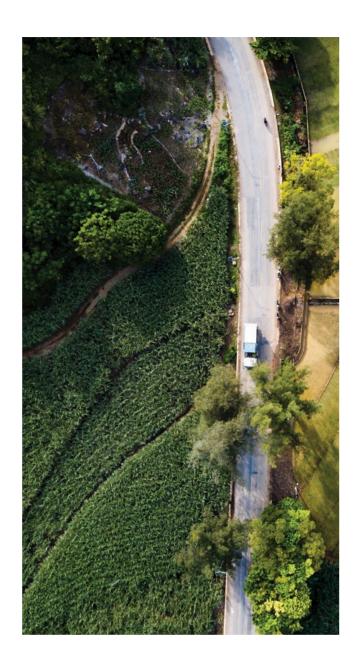
"We are monitoring climate differently than others and can determine the quality and in-tensity of rain, says Alejandro. The Guatemalan government has 50 weather stations, but even with the most accurate rain gauge, the data is only accurate at that point. 400 meters away, the data will be different."
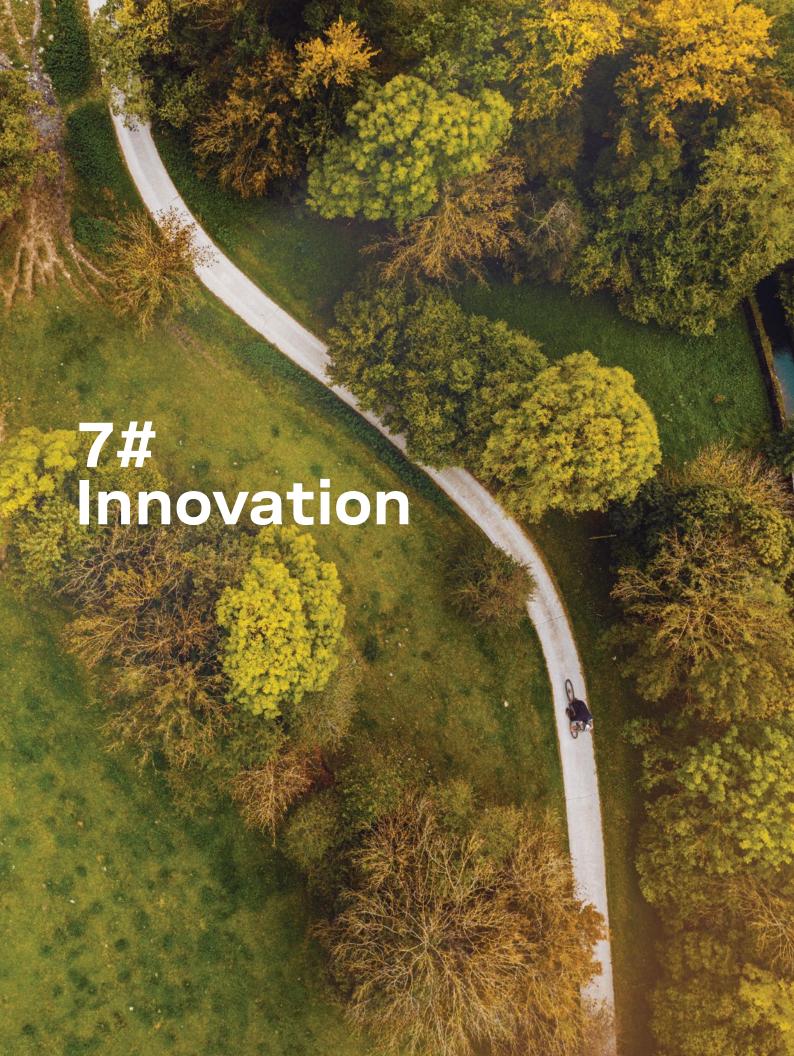
"Guatemala needs a high-density rain gauge network to be able to start making decisions ac-curately, emphasizes Juan. At the moment, we

are learning the behavior of rain, but ultimately, we plan to automate optimal irrigation based on the right algorithm. Then, our vision is to share this data with Guatemala and the world."

ioroots has received funding from the Fundea Foundation to roll out 5,000 sensors and rain gauges to help 15,000 small Guatemalan farmers over the next two years. Central America is one of the most vulnerable areas globally to climate change. As a result, Guatemala has become a proof of concept country for a high-density rain gauge network and data engine.

"This is a blueprint of how we are going to operate in the future, says Juan. With 80% of the risk in agriculture due to either too much rain or not enough, we must better manage our freshwater supplies."

Alejandro summarizes, "My father told me when we installed ioroots across our sugar fields, if this project is profitable that's great, but if it helps humankind, then that's what really matters."

# 7#
# Innovation

**Swiss tradition from silicon-to-cloud**
While most companies within the IoT industry work on mass production of components, u-blox has strategically positioned itself differently with its silicon-to-cloud approach.

What began with modules for integrating various chips into a fully functional assembly in 1997 progressed when we integrated radios and signal processing in 2002 into our own chipsets then moved on to single die chipsets in 2007. The introduction of cellular and short range connectivity products since 2008 laid important additional foundations, and in 2018 we achieved chip-to-cloud solution capabilities.

**"u-blox is one of the few companies able to offer the essential connectivity technologies (positioning, cellular, short range) optimized with services from one company."**

**We have distinguished our market position**
Our silicon-to-cloud solution strategy, combined with our Swiss tradition of restless technological innovation, precision, and quality, has made u-blox a global Internet of Things (IoT) technology leader in positioning and wireless communication and distinguishes our market position within the IoT sector.
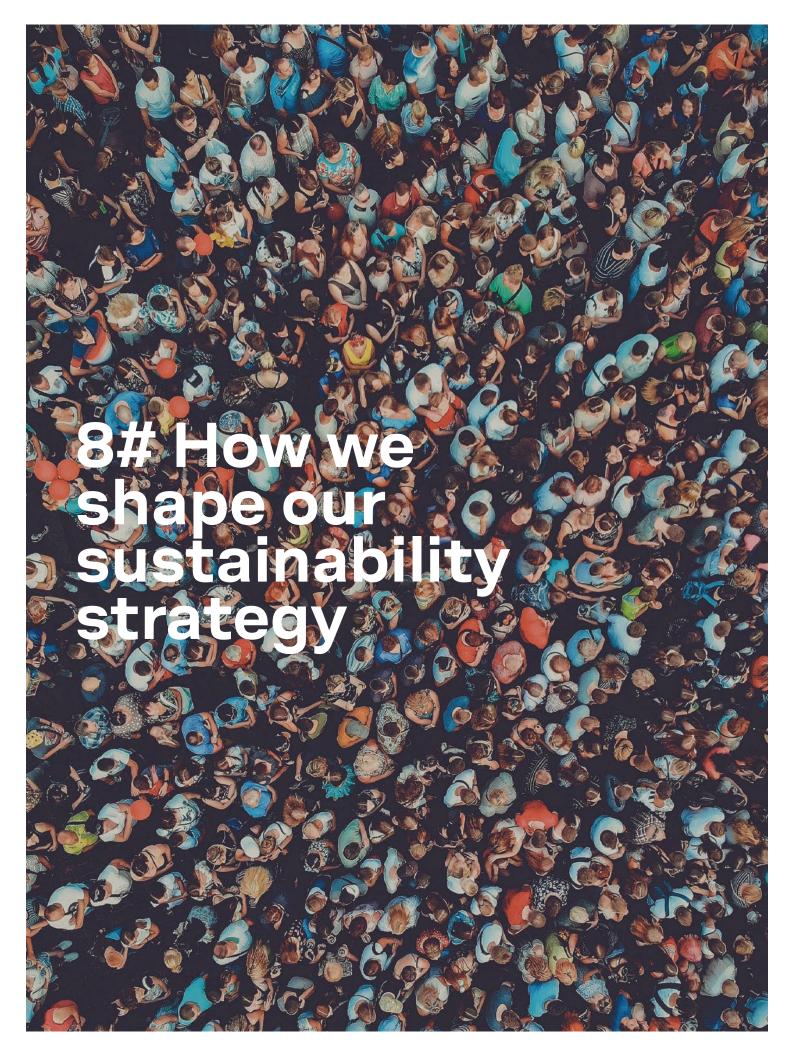
**Complete solution on one chip = customer satisfaction**
In 2021, we began producing chips and modules with complete solution capabilities inside. Delivering on our silicon-to-cloud promise, we provide market-ready solutions with concurrent positioning and communication capabilities on one chip.

With the hardware and software on chip, product form factors are miniaturized and functionality continuously enhanced. This optimized functionality on one chip reduces time to market and cost/performance and helps our customers continuously differentiate their product offerings within their competitive markets.

Our customers benefit from decades of experience in problem solving and our ability to leverage our core intellectual property to their benefit.

**"With the hardware and software on chip, product form factors are miniaturized and functionality continuously enhanced. This optimized functionality on one chip reduces time to market and cost/performance and helps our customers continuously differentiate their product offerings within their competitive markets."**

# 8# How we shape our sustainability strategy

**Targeting all levels of our business**
Our sustainability strategy is designed to ensure sustainability considerations feed into every decision we make – at all levels of the business.

To underline our commitment to be a good corporate citizen – and learn from a community of like-minded, responsible organizations – we signed the United Nations Global Compact already in 2012. This is the world's largest corporate sustainability initiative encompassing the 17 Sustainable Development Goals (SDGs) established by the United Nations as a blueprint for achieving a better and more sustainable future for everyone. They address the global challenges we face, including poverty, inequality, climate change, environmental degradation, peace, and justice.

# Why the UN Global Compact?

Back in 2012 when u-blox became a UN Global Compact signatory, there were far fewer signatories than the, to date, 19,357 organizations. Together these businesses and civil society organizations are doing business responsibly by aligning their strategies and operations with the UNGC 10 principles on human rights, labor, environment, and anti-corruption; and taking strategic action to advance broader societal goals, such as the 17 UN Sustainable Development Goals, with an emphasis on collaboration and innovation.

The UN Global Compact is a global movement that is shaping a sustainable future through a shared commitment to deliver on ambitious goals for humanity and our planet. Each UN SDG represents challenges far greater than any one organization alone can overcome. We can accomplish far more through shared commitment, collaboration, innovation, and action through shared commitment, collaboration, innovation, and action.
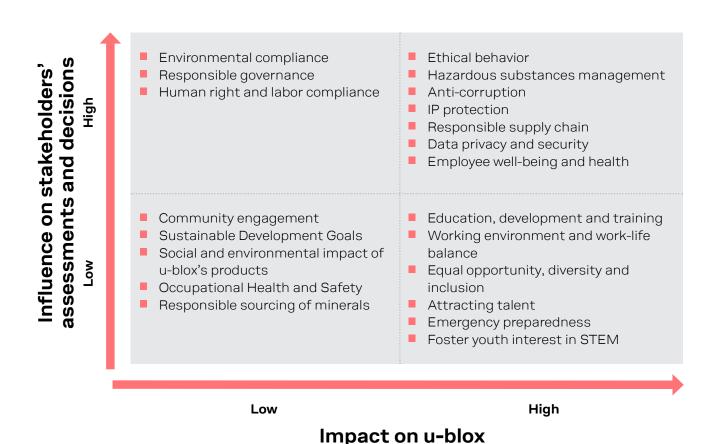
## Our 2021 GRI Materiality Analysis

In 2021, we renewed our Global Reporting Initiative (GRI) Materiality Analysis to identify and prioritize the areas where u-blox can make a meaningful economic, environmental, and social impact - areas that are important to and highly influence the decision-making of u-blox and our stakeholders. Coupled with the United Nations SDGs, the results shaped our sustainability strategy, and shape how we organize ourselves, take action, report and communicate on sustainability.

## Open dialog with u-blox stakeholders around the world

With a global footprint on five continents, the u-blox stakeholder community is vibrant and diverse. Our employees, customers, investors, partners, the communities we live and work in, and other organizations and entities that can affect or be affected by our activities all have a stake in u-blox.

We actively seek opportunities on an ongoing basis to communicate with and gather input across multiple channels with our global stakeholder community.

We welcome an open dialog with stakeholder engagement along our journey to a more sustainable future.

**Influence on stakeholders' assessments and decisions**

**High**

- Environmental compliance
- Responsible governance
- Human right and labor compliance

- Ethical behavior
- Hazardous substances management
- Anti-corruption
- IP protection
- Responsible supply chain
- Data privacy and security
- Employee well-being and health

**Low**

- Community engagement
- Sustainable Development Goals
- Social and environmental impact of u-blox's products
- Occupational Health and Safety
- Responsible sourcing of minerals

- Education, development and training
- Working environment and work-life balance
- Equal opportunity, diversity and inclusion
- Attracting talent
- Emergency preparedness
- Foster youth interest in STEM

**Low**                    **High**

## Impact on u-blox
## (Economic, Environmental and social)

| Stakeholders | Stakeholders dialog | Areas of interest (ESG) | How we work with these topics today |
|---|---|---|---|
| **Our investors** | • Full year and half year IFRS based reporting (Annual ESG update)<br>• 1-to-1 meetings<br>• Annual general meetings<br>• Responses to investors's questions and feedback collection<br>• u-blox's website<br>• Press releases and IR mailings | • ESG goals in compensation<br>• Ethical behavior<br>• Supply chain management<br>• People management<br>• Green products<br>• Weapons ban | • RBA supplier code of conduct in place<br>• UN Global Compact implemented<br>• Code of Conduct available and yearly training<br>• Anti-corruption policy in place<br>• Applications limitations avoiding use in weapons |
| **Our customers and distributors** | • Direct sales connects to all our<br>• customers and their applications<br>• Face-to-face<br>• Customer support<br>• Technical expertise<br>• u-blox website, forum and portal<br>• Webinars<br>• Exhibitions and seminars<br>• Mailings, webcasts | • Products compliance<br>• Resource efficiency<br>• Sustainable sourcing<br>• Human rights and labor compliance<br>• Security in data connectivity<br>• Green products | • RBA supplier code of conduct in place<br>• UN Global Compact membership<br>• Hazardous substances management/document<br>• Conflict mineral statement<br>• Low power products<br>• Miniaturization products |
| **Our manufacturing partners and suppliers** | • Supplier Self-Assessment surveys<br>• Ongoing product compliance monitoring<br>• Annual supplier survey<br>• Periodic supplier training<br>• Annual sustainability report | • Human rights and labor compliance<br>• Environmental, Health & Safety (EHS) compliance<br>• Supply chain management<br>• Environmental protection<br>• $CO_2$ footprint | • UN Global Compact membership<br>• RBA supplier code of conduct in place<br>• u-blox Environmental Management Systems (EMS)<br>• EU Restrictions of Hazardous Substances (ROHS) directive<br>• EU Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) regulation and the linked SCIP database<br>• Perfluorooctanoicacid acid (PFOA), and Perfluorooctane sulfonic acid (PFOS) regulations<br>• Halogen Free content according to IEC 61249-2-21 standard<br>• Conflict mineral statement<br>• Anti-corruption policy in place |
| **Our employees and potential employees** | • Supportive dialogue<br>• Performance reviews<br>• Employee satisfaction survey<br>• Intranet resources<br>• Monthly staff meeting<br>• Internal training<br>• Open doors and transparency | • Training and education<br>• Ethics<br>• Health and safety<br>• Working conditions<br>• Work-life balance<br>• Non-discrimination<br>• Woman in tech, equal pay/ equal chances | • Code of conduct in place<br>• Anti-bribery and anti-fraud guidelines and yearly training in place<br>• Yearly performance review are carried out<br>• Employee satisfaction survey are carried out<br>• RBA code of conduct in place<br>• Benefits program in place |
| **Authorities** | • Legislative and regulation requirements<br>• Audits | • Product compliance<br>• Anti-corruption<br>• Working environment<br>• Legal compliance<br>• Regulation compliance | • Hazardous substances management with database covering all products<br>• UN Global Compact membership<br>• Anti-bribery policies in place |
| **Communities and public** | • Press realeses<br>• u-blox's website<br>• Cooperation with educational institutions<br>• Dialogue with government institutions<br>• Social media | • Community engagement<br>• Education and training<br>• The environment<br>• Ethical behavior | • UN Global Compact membership<br>• Charitable contributions (funds and products) in the communities<br>• Employee volunteer program in place<br>• Cooperation with universities<br>• Meeting with government representatives |

# 9# The five pillars of our Sustainability Strategy – in depth

## Our key topics and concerns

We have identified several key topics and concerns, which we have grouped into five pillars and aligned with the UN SDGs to form the basis of our sustainability strategy.

# u-blox five pillars of sustainability, our goals, and UN SDGs at-a-glance

## Pillar 1

**Business ethics, privacy, and security**
We believe in doing business the right way. Conducting ourselves with honesty and integrity – and maintaining high standards around privacy and security – is essential if we are to win and maintain the respect of our customers, investors, business partners, and the communities where we operate.

## Pillar 2

**Employees**
We encourage diversity and promote a culture of inclusion among our employees. Our varied backgrounds, ideas, and experiences are critical to our success. Fostering a truly inclusive organizational culture helps us attract and retain the best talent. People retention is, therefore, a key performance indicator that we monitor.

## Pillar 3

**Environmental responsibility**
We are committed to protecting our planet for future generations. We will do this by continually seeking ways to make our products and operations even more environmentally friendly.

## Pillar 4

**Supply chain responsibility**
Our focus is to ensure we create our products in ways that do not harm individuals, communities, or the environment, and that all minerals and other materials are sustainably and responsibly procured.
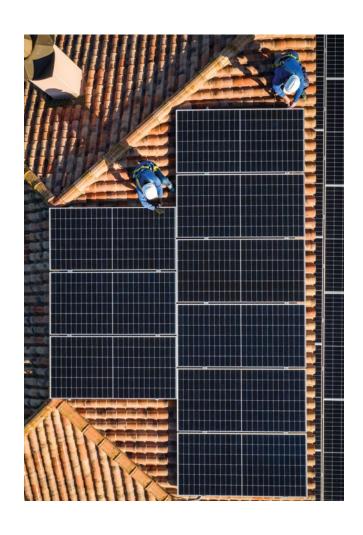
## Pillar 5

**Community**
We believe in building sustainable communities around the world. And u-blox is contributing in various ways: we provide our technology, we make financial contributions, we encourage (and incentivize) our people to offer their expertise, and we work with educational establishments to support people's learning.

# 10#
# Our goals, achievements, and status

**Each year we progressively do more**
Since 2012 we have continually worked on implementing policies and activities around our five pillar sustainability strategy. We have progressively done more each year to improve the sustainability of all aspects of our business.

Our specific sustainability goals, projects, and commitments within each of our five pillars are all designed to contribute to one or more UN SDGs.
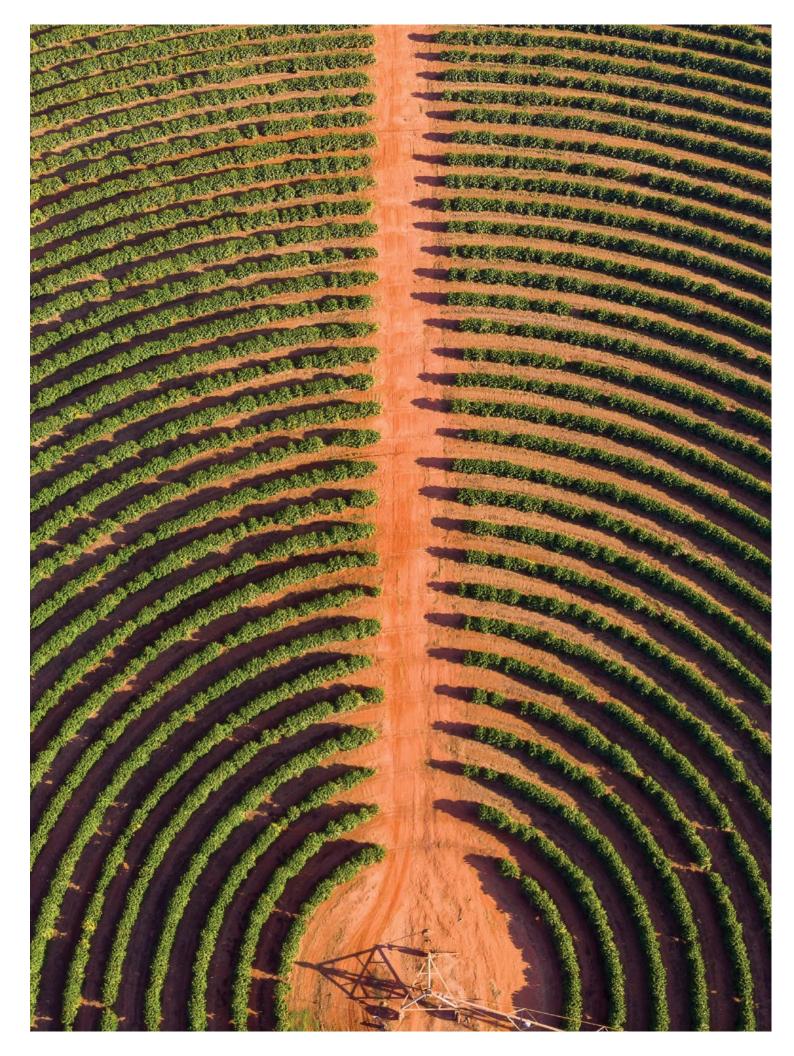
# u-blox ESG goal status as of January 2022

**u-blox goals September 19, 2021 – March 1, 2022 on track**

| Pillar/ESG Goals | Goals evaluation | Goals achieved (March 2022) | Supporting SDGs |
|---|---|---|---|
| **Business ethics and supply chain responsibility** | | | |
| **1. Do business the right way:** Increased audit capacity and intensity, particularly related to human and labor rights. | Define scope and **run one audit** with a business partner. | **No audit** ⊗ | SDG icons: 3 Good Health and Well-Being, 5 Gender Equality, 8 Decent Work and Economic Growth, 12 Responsible Consumption and Production, 13 Climate Action, 16 Peace, Justice and Strong Institutions |
| | **We completed the risk analysis, desk research. By March 2022 we will have defined the roadmap.** | ✓ | |
| **Employees** | | | |
| **2. Respect our people:** Diversity, equality, and inclusion training. | Train **40%** of our staff in non-violent communication techniques. | ✓ | SDG icons: 4 Quality Education, 5 Gender Equality, 8 Decent Work and Economic Growth, 9 Industry, Innovation and Infrastructure, 11 Sustainable Cities and Communities |
| | **Number of people trained: 415, 40%** | | |
| **Environmental responsibility** | | | |
| **3. Protect the environment:** Commitments to achieve net zero emission goals in the medium term. | Develop concept and cost for $CO_2$ for **three major u-blox sites.** | ✓ | SDG icons: 3 Good Health and Well-Being, 12 Responsible Consumption and Production, 13 Climate Action, 16 Peace, Justice and Strong Institutions |
| | **Thalwil, Sgonico and Malmö** | | |
| **Community** | | | |
| **4. Sustainable products:** Implementation of our technology for socially responsible projects. | Supporting **two** like-minded organizations. | ✓ | SDG icons: 3 Good Health and Well-Being, 4 Quality Education, 5 Gender Equality, 10 Reduced Inequalities, 11 Sustainable Cities and Communities |
| | **Charity:Water** | | |
| | **No Isolation** | | |
| | **Naviblind** | | |
| **5. STEM education:** Cooperation with organizations delivering STEM education. | Support **two** organizations inspiring youth to pursue an education in STEM. | ✓ | |
| | **Schweizer Jugend Forscht** | | |
| | **IngCH: Engineers Shape Our Future** | | |

# u-blox goal setting for April 2022 – March 2023

| Pillar/ESG Goals | Goals (base) | Goals (optimum) | Supporting SDGs |
|---|---|---|---|
| **Business ethics and supply chain responsibility** | | | |
| **1. Do business the right way:** Increased audit capacity and intensity, particularly related to human and labor rights. | Execute implementation for the responsible Supply Chain Management for relevant tier-1 suppliers: **Update Supplier Code of Conduct and SAQ**. | Execute to mitigate social, environmental, health and safety, and/or ethical risk if identified (Run one audit: online or on-site). | SDG 3, 5, 8, 12, 13, 16 |
| **Employees** | | | |
| **2. Respect our people:** Diversity, equality, and inclusion training. | Having **trained 40% of our staff** in non-violent communication techniques. | Having trained 48% of our staff in non-violent communication techniques. | SDG 4, 5, 8, 9, 11 |
| **Environmental responsibility** | | | |
| **3. Protect the environment:** Commitments to achieve net zero emission goals in the medium term. | Continue «Prevent, Minimize, Offset» strategy for **3 sites.** | Expand «Prevent, Minimize, Offset» strategy for 1 additional site. | SDG 3, 12, 13, 16 |
| **Community** | | | |
| **4. Sustainable products:** Implementation of our technology for socially responsible projects. | Create a **framework** to qualify the field impact of our products. | Framework and one product family (e.g., u-blox 8 chipset) fully quantified. | SDG 3, 4, 5, 10, 11 |
| **5. STEM education:** Cooperation with organizations delivering STEM education and engage girls/women. | Support **two** organizations inspiring youth to pursue an education in STEM. | Support three organizations inspiring youth to pursue an education in STEM (Focus on local activity where we have an office). | |
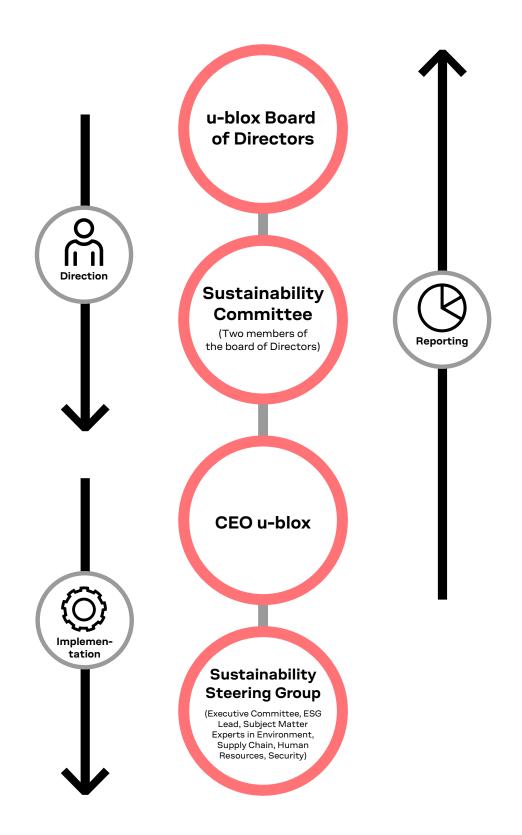
# 11#
# Sustainability governance at u-blox

The Nomination, Compensation and Sustainability Committee (NCSC) consists of two members of our Board of Directors. The Committee monitors u-blox's sustainability activities and ambitions and approves its strategy and goals based on regular sustainability updates from the Sustainability Steering Group.

Our CEO Thomas Seiler is responsible for global sustainability at u-blox and chairs our Sustainability Steering Group.

The Sustainability Steering Group is responsible for setting the u-blox Environmental, Social, and Governance (ESG) strategy, implementing key processes, and coordinating data collection. The composition of the steering group includes members of the Executive committee, ESG manager, and subject experts.

The Sustainability Steering Group meets four times per year and reports to the Sustainability Committee. The NCSC also meets four times per year to address ESG topics including the setting of targets, status reports and review of the Sustainability Report.

**Direction**

**Implemen-tation**

**u-blox Board of Directors**

**Sustainability Committee**
(Two members of the board of Directors)

**CEO u-blox**

**Sustainability Steering Group**
(Executive Committee, ESG Lead, Subject Matter Experts in Environment, Supply Chain, Human Resources, Security)

**Reporting**

# 12#
# Pillar 1:
# Business ethics, privacy, and security

# 94%

**Employees trained on the
u-blox Code of Conduct**

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**Explanation of the material topic and its boundaries**

We believe in doing business the right way every day. Conducting ourselves with honesty and integrity and maintaining high standards around privacy and security is important to u-blox employees around the world. It is also essential if we are to win and maintain the respect of our customers, investors, business partners, and the communities where we operate.

**Our approach to business ethics, privacy, and security**

The u-blox Code of Conduct is based on the UN Global Compact's 10 guiding principles, simplified into 7 core principles. These principles cover human rights, labor, the environment, and anti-corruption; they feed into every aspect of our business, both strategically and operationally, and are the foundation of our approach to business ethics, privacy, and security.

Learn more about the u-blox Code of Conduct.[1]

**Annual business ethics training**

Everyone at u-blox receives annual business ethics training, which provides practical guidance on how to respond in different situations. The u-blox Code of Conduct is an important resource that sets forth our fundamental commitment to conducting business ethically and honestly. We are absolutely committed to winning with integrity! The Code of Conduct clearly lays out what we ask of our employees and is designed to help them deal with difficult situations, upholding our reputation as a company with integrity that can be trusted. We

do business responsibly and ethically and are committed to sustainable development while respecting the needs of the individual, society, and the environment.

**"Our Code of Conduct is based on the UN Global Compact's 10 guiding principles, simplified into 7 core principles. These principles cover human rights, labor, the environment, and anti-corruption; they feed into every aspect of our business, both strategically and operationally."**

**Zero tolerance for bribery and corruption**

A key pillar in the u-blox Code of Conduct is our zero tolerance for bribery and corruption. Both are the antithesis of doing business the right way. We do not give or accept bribes and have clear guidelines for employees to follow when it comes to gifts and entertainment. In 2021 we continued to achieve 100% compliance.

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[1] https://content.u-blox.com/sites/default/files/Code%20of%20conduct%20ver%200.3_interactive.pdf

# Our Speak Up whistle-blower program

In 2021 we continued with our Speak Up whistle-blower program to provide a safe, easy, and anonymous way for employees to report potential misconduct related to our business. Complaints can be made directly through an externally provided service, which offers the possibility to report anonymously. Our Compliance Committee will investigate all reports and has the power to set binding actions that require the relevant part of the business to follow. These could include organizational measures to protect against similar occurrences in the future and individual disciplinary action. Further, the u-blox Code of Conduct protects whistle-blowers against dismissal, demotion, and other forms of retaliation.

**Reporting misconduct**
Taking action to prevent problems is part of u-blox's culture. We encourage our employees to report their concerns if they see possible unethical or illegal conduct. If our employees are in doubt about correct business behavior, we encourage them to seek advice. The u-blox Code of Conduct tells them where they can find help and how they can raise a compliance concern. Our open-door policy means they can approach their line manager, a member of the Executive Team, or Human Resources with their questions or concerns.

**OECD compliant transfer pricing**
u-blox adheres to the Organisation for Economic Co-operation and Development (OECD) transfer pricing guidelines for multinational enterprises and tax administration.

**Financial assistance received from governments**
In 2021, u-blox received the following types and amounts of financial assistance from the governments of the United States, Singapore, and Greece:

| u-blox entity | Government | Type | Amount |
|---|---|---|---|
| u-blox AG | United States | Paycheck Protection Plan forgiveness program | CHF 234,804 |
| u-blox Singapore | Singapore | R&D tax credit | CHF 36,723 |
| u-blox Athens | Greece | Short-time work program | CHF 1,547 |

**Participation in public policy and lobbying**
u-blox does not participate in public policy making or lobbying activities.

**Protecting Intellectual Property**
u-blox has invested CHF 1 billion in our core IP over the last 15 years.  Our intellectual property (IP), which includes patents, trademarks, copyrights, and trade secrets, comprises some of our most valuable assets. We treat it with extreme care to protect our market position and competitive advantage. Moreover, we invest heavily in growing this portfolio of IP every year, with more than 20% of our revenue dedicated to R&D to generate a constant flow of innovation. Equally important, we respect the intellectual property rights of others. We are willing licensees to standard essential patents (SEPs).

**Digital and physical security**
We have a company-wide security function led by our Corporate Security Management team utilizing our Information Security Management System aligned with ISO 27001 and Common Criteria (ISO/IEC 15408) requirements. In addition, specialized security experts and other stakeholders from across our business are responsible for the security of our physical sites around the world, as well as our information systems, products, and services.

**Protecting Data privacy**
Customers and partners entrust us with their personal and sensitive data. We take our responsibility to protect it extremely seriously. Our Privacy Policy explains how we use any personal data we collect. We protect this data in line with the policies and procedures set out in our Information Security Management System (ISMS).

**Designing secure products**
To protect our customers – and theirs – against the many and varied threats their devices and data face in the connected world, it is our responsibility to create secure products. This means designing for security from the start, ensuring we have full-lifecycle security plans in place for our products and keeping them secure throughout their long field lives.

IoT security is complex, fast-moving, and multi-faceted. Addressing it demands a

sophisticated, multi-pronged approach. Security is built in our products. The u-blox Trusted Domain and its five pillars form a foundation for building new generations of secure devices.

In 2020, we signed the GSM Association (GSMA) Digital Declaration, a set of aspirational principles to guide activity in the digital age to build a sustainable and secure digital future.

Through our collaboration with digital security leader Kudelski Group, we are incorporating premium-grade security, including robust encryption key management, into our latest range of cellular products.

We work closely with our key suppliers to safeguard security in our products' supply chains. We collaborate with independent security researchers to test our products, both pre-and post-launch. We have a Responsible Disclosure Policy in place to enable individuals or organizations to report product and service vulnerabilities to us.

Learn more about the u-blox Responsible Disclosure Policy[1]

**Amplifying cybersecurity on multiple levels**
In 2021 u-blox Corporate Security conducted security testing on the core IT infrastructure and triggered a task force to address the findings. We rolled out multiple additional product security processes throughout the year and established corporate security experts within our product centers to support current and upcoming product development. A "Red Team" in-house security center of excellence provides regular security testing within our product centers.

**Deeper security integration into the core chip**
We have also made a deeper security integration into our products. For example, we integrate the secure element for handling encryption keys and provide the service for managing the security keys, all enhanced with zero-touch provisioning.

**Cybersecurity collaboration with suppliers and customers**
u-blox Corporate Security has also strengthened security collaboration with our most critical

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[1] https://www.u-blox.com/en/info/u-blox-privacy-policy

contract manufacturing partners and other critical suppliers as we are preparing for the u-blox Information Security Management System for the upcoming ISO15408 Common Criteria and ISO27001 certification. We have also worked closely with our customers' security teams with knowledge sharing and security workshops throughout the year.

**Evaluation of our approach to business ethics, privacy, and security**
We are committed to the UN Global Compact's 10 guiding principles addressing human rights, labor, the environment, and anti-corruption. Every aspect of our business both strategically and operationally, is guided by these principles.

We continuously safeguard our customers and partners sensitive data while creating secure products to safeguard our customers – and theirs – against the many and varied threats their devices and data face in the connected world.

We consistently train our employees and supplier partners with the u-blox Code of Conduct while conducting our global business responsibly and ethically, making a meaningful contribution to sustainable development.



| Pillar/ESG Goals | Goals evaluation | Goals achieved (March 2022) |
|---|---|---|
| **Business ethics and supply chain responsibility** | | |
| **Do business the right way:** Increased audit capacity and intensity, particularly related to human and labor rights. | Define scope and **run one audit** with a business partner. | **No audit** ⊗ |
| | **We completed the risk analysis, desk research. By March 2022 we will have defined the roadmap.** | ✓ |

# Business ethics, privacy, and security indicators

**We are committed to the UN Global Compact**

Since we became a signatory in 2012, our Code of Conduct has been based on the UN Global Compact's 10 guiding principles, simplified into 7 core principles. These principles cover human rights, labor, the environment, and anti-corruption, and they feed into every aspect of our business, both strategically and operationally.

**u-blox Speak Up whistle-blower program**

In 2021 we continued our Speak Up whistle-blower program to provide a safe, easy, and anonymous way for employees to report potential misconduct related to our business.

**100% compliance/zero tolerance for bribery and corruption**

A key pillar in the u-blox Code of Conduct is our zero tolerance for bribery and corruption. Both are the antithesis of doing business the right way. We do not give or accept bribes and have clear guidelines for employees to follow regarding gifts and entertainment. In 2021 we continued to achieve 100% compliance.

**Annual Code of Conduct training for all u-blox employees**

100% of u-blox employees are required to train each year on the u-blox Code of Conduct.

**Amplified Information Security Management System**

- u-blox Corporate Security conducted security testing on the core IT infrastructure and triggered a task force to address the findings
- Rolled out product security processes and established experts in product centers to support current and upcoming development
- Established the Red Team in-house security center of excellence to provide regular security testing within u-blox product centers
- Established security collaboration with the most critical contract manufacturers and other critical suppliers
- Prepared the Information Security Management System for upcoming ISO15408 Common Criteria and ISO27001 certification

# 13#
## Pillar 2:
# Our employees and our u-blox family "Better Together" culture

**Explanation of the material topic and its boundaries**

We take our responsibility seriously to provide to all our employees, located across 31 locations worldwide, with a safe, healthy, fair, and equitable workplace where they can thrive and share in our success. The employee section of this sustainability report relates to how the u-blox Executive Committee and Global and Local Human Resource teams deliver on this crucial responsibility.

**Our approach to our employees**

We have a very strong and supportive "Better Together" culture in our u-blox DNA. This has become even more apparent during these challenging times and was highlighted by our employees in our recent engagement survey.

Throughout u-blox, employees display a strong emotional contract with the company. This was demonstrated throughout the past year as everyone pulled together and went above and beyond to support our customers and each other.

**"Twenty-five years after our founding, despite the significant growth of our global footprint and a recent pandemic, there is a strong collaborative and innovative spirit across the business, nurturing a thriving start-up culture at u-blox."**

**Agile, lean decision making**

Our leadership team empowers employees to make their own decisions, whether on a day-to-day business or in an agile working environment encouraging employee development and ownership throughout u-blox. In addition, our leadership team members balance employee empowerment with knowing when an employee needs direct support either from them or from other team members.

**Innovation and start-up mentality**

Twenty-five years after our founding, despite the significant growth of our global footprint and a pandemic, there is a strong collaborative and innovative spirit across the business, nurturing a thriving start-up culture at u-blox.

**Diversity and inclusion**

Evidence shows that more diverse workforces are more productive, which is good for u-blox, our customers, and our shareholders. We have equality policies covering all aspects of our operations, including recruitment, pay, training, and development. Our HR team actively supports all parts of the business by providing practical help and training to colleagues to ensure we treat everyone equally.
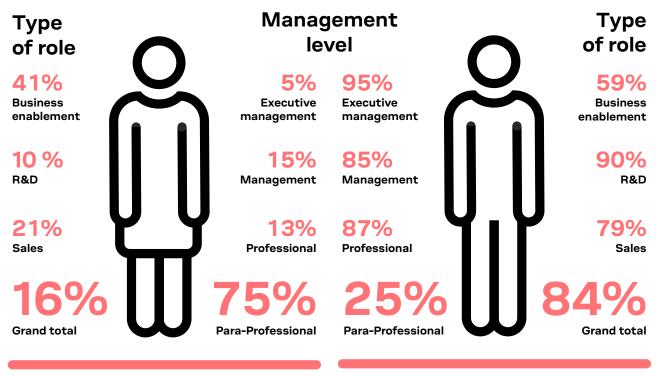
Like many engineering businesses, we have a gender imbalance, which we also see at universities where women studying engineering make less than 20% of the population. We seek to address our gender imbalance with a combination of our recruitment, training, mentoring, and retention strategies, including working with educational institutions and communications programs targeting potential candidates.

We closely monitor the gender balance at all levels of our business. At the end of 2021, 16% of our overall workforce was female. 52 of our senior and management level positions are held by women. Positions requiring an engineering degree have low levels of gender diversity proportional to the current situation at universities. However, in administrative roles, women hold a majority of the positions. At the Board of Director level, two out of seven members are women. We encourage all of our employees, regardless of gender, to actively engage with their peers in fora and other external industry association roles to help take IoT forward.

**Board and EC**

u-blox is committed to gender diversity at the board and executive committee (EC) level. Since many years, u-blox has managed to meet its target of 30% female representation at board level.

u-blox's target percentage level may not be met at each point in time, for example, when the

## Type of role

**41%**
Business enablement

**10 %**
R&D

**21%**
Sales

**16%**
Grand total

## Management level

**5%**
Executive management

**15%**
Management

**13%**
Professional

**75%**
Para-Professional

**95%**
Executive management

**85%**
Management

**87%**
Professional

**25%**
Para-Professional

## Type of role

**59%**
Business enablement

**90%**
R&D

**79%**
Sales

**84%**
Grand total

# Female

# Male

search for appropriate candidates takes longer than expected. However, u-blox will always strive to meet this target.

At EC level u-blox has not yet achieved gender diversity. u-blox's long term goal is to have an executive committee where female members are represented. Unlike board members, who are elected annually by the shareholders, EC members are employed for an unlimited period of time and the occasion for replacement is rare. Accordingly, the timeframe for achieving gender diversity within the u-blox executive committee members is unknown.

**Employee retention**

Employee retention is a strategic goal at u-blox, and we have a wide variety of measures in place to support it. For example, based on our 2021 engagement survey results, we implemented structural salary and benefits adjustments in different countries along with other corporate, functional, and site measures. Besides tracking key performance indicators showing our numbers of leavers, both voluntary and dismissals, we conduct semi-annual performance and objectives reviews. With such insight, we define career progress measures. We have outlined below some of our actions to support employee retention:

**Culture of inclusion and diversity reflects the communities we work in and the markets we serve**

Across all our operations, currently, in 31 locations with staff representing 63 nationalities, we maintain an inclusive culture where diversity is valued, discrimination is not tolerated and everyone is treated with dignity and respect. We also have a zero-tolerance policy for any form of harassment or abusive behavior.

Our corporate values and identity guidelines, which are provided to all employees, help to ensure that we have a culture that nurtures diversity and inclusion regardless of race, gender, ethnic origin, age, religion, disability, family status, social origin, sexual orientation, gender identity, or gender expression. As a global company, we believe our people and culture should reflect the diversity found in the com-

**"We implemented a learning management system at u-blox, which allows us to develop and rollout internally developed learning content. Since March 2021, 400 modules have been created on the platform."**

munities we work in and the markets we serve. Further, we believe diversity drives innovation and efficiency and helps us to better serve our customers and our industry.

Our headquarters in Thalwil, Switzerland, is a good example, where our employees represent 40 different nationalities. Additionally, the majority of our development teams have members in more than one physical site, often in several countries. Collaboration is facilitated through virtual meetings, and a unique training program for line managers of multi-site teams has been developed to support international leadership in a multi-cultural environment.

**Open-door culture**

We work hard to nurture an open-door policy throughout the business. We have a flat organizational structure promoting open communication at all levels to listen to and act upon employee needs.

**An open information culture**

Since the foundation of our company, we have fostered an open information culture and keep all staff updated every month in detail about the course of our business, the progress of our projects, and the status of our organization. We treat all our colleagues with respect and trust.
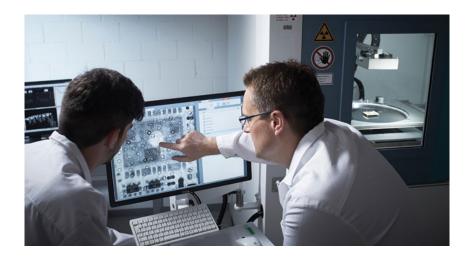
**Communication culture**

In 2021 we provided Nonviolent Communication (NVC) training to approximately 40% of u-blox employees. This compulsory corporate training, which is a compulsory training for all employees, helps us to improve our collaboration by speaking up for things that are important to us (honesty) and listening more carefully to what is important to others (empathy). Such a communication culture forms a strong foundation for inclusion and allows the power of diversity to be unleashed.

**Freedom of association**

u-blox employees have the right to associate freely as per local regulation. These rights are specifically clarified in our local employment policies. Grievance procedures are also described in our global employment policy as well as in our local policies. Grievance processes can differ from country to country depending on local labor laws and are taken very seriously. Progress is monitored tightly and treated with the highest level of confidentiality.

**Career development**

u-blox recognizes that career development will mean different things to different people and perhaps be different at other points in their lives. As a result, we have designed a career development strategy that caters to a broad range of employee developmental needs to help them grow and reach their individual goals. We want all u-blox employees to shift their focus from past performance and look forward with emphasis on their personal development and growth for better performance.

In regular career development discussions, employees discuss and define jointly with their line manager their personal development needs and interests while addressing their career ambitions and progress. Alongside our core trainings, we offer flexible, professional development opportunities for everyone in the business, including courses and material from selected internal and external providers as well as training developed in-house, unique to u-blox. We expect every employee to invest a minimum of 3 workdays for training towards their personal growth and development each year.

**Knowledge sharing and strategic training management**
In 2021, we implemented a learning management system at u-blox, which allows us to develop and rollout internally developed learning content. 400 modules have been created on the platform by our employees to empower them to share their knowledge and support other colleagues in their development and growth.

With this centralized learning management system, we ensure all our training and professional development is centrally logged. The system enables managers to assign training to employees and those employees to track their progress. Simultaneously it allows the company to report in detail on specific training targets like regular corporate trainings such as Code of Conduct, Communication, Management, as well as Safety and Security training. Additionally, the system supports u-blox by identifying and recognizing experts in particular areas. We have also established a number of cross-functional teams to support knowledge sharing and provide employees with a broader scope of u-blox initiatives and roles.

With the implementation of a globally renowned e-learning library and platform, we are investing in the personal development of all our employees. This modern learning experience is personalized, thanks to data-driven recommendations. As a result, our employees can use and apply learning according to their needs and personal growth interests. u-blox is building a digital learning ecosystem that enables learning to happen anytime, anywhere. With this strategic approach and focus on digital learning, we are building a learning organization that also reduces our carbon footprint.

**Investment in our future talent**
We have employed nine trainees in various jobs in apprenticed schemes permanently over the last four years. We also offer regular internships for graduates in STEM in our R&D centers in Europe.

**Employee engagement survey**

In 2021, we shared the results of our latest employee engagement survey. Over 75% of employees participated in the survey. We are very pleased that 94% of the respondents confirmed being satisfied with their overall working conditions and working environment and that 92% confirmed being satisfied with u-blox as an employer.

In addition, every site and department has developed specific measures in accordance with the engagement survey results for their area, e.g., by implementing a dedicated department communication channel or adapting certain benefits.

**Work-life balance**

We hire people who are passionate about what they do, but we do not want their work to take over their lives. Alongside their annual leave allowance, all employees are contractually entitled to time off to care for dependents and other special reasons according to local legislation. At u-blox, we support further types of leave beyond the legal requirements whenever it is possible without disrupting business continuity. In different countries and in line with local regulations and contractual possibilities, we also offer every five years up to two months unpaid leave to our employees for their private activities and development.

Similarly, our employees have the possibility to reduce their working time if they need more time for family matters or to further their education related to their professional activity at u-blox.

As well, different local benefits across our 31 locations support a variety of sports and leisure activities for our people.

With our 2021 engagement survey we addressed our employees' expectations and needs. Due to the experience of the pandemic, the vast majority appreciated the opportunity to work more flexibly from home. Consequently in 2021, we implemented a new Remote Work Guideline, effective since September 2021, which is a flexible hybrid work model whereby employees can work up to 40% from home. The new flexible

| Types of employement | 2021 |
|---|---|
| Employees with permanent work contracts | 91.5% |
| Employees with temporary work contracts | 8.5% |
| Directly employed workforce | 96.4% |
| Not directly employed workforce | 3.6% |

model is another significant contribution to supporting our employees' work-life balance with less commuting, and it also has a positive impact on our carbon footprint.

**Types of employment**
As a knowledge driven company with a unique in-house innovation rate, it is critical for our organization to limit the use of non-regular employment to a very low level.

With permanent work contracts we also believe in giving our people stability in their lives and work. That's also why the vast majority of those working for u-blox are permanent employees.

**Pay and benefits**
Appealing employment packages with equal pay based on the job grade are another important part of our strategic aim to attract and retain the best people. All positions are graded using the Mercer Universal Position Code. We benchmark our salaries using an external provider to ensure we remain an enticing employer for the very best people.

**Gender pay equality**
We are fully committed as before to treat all colleagues fairly and equally, by addressing any difference in the annual Grading & Salary review.

u-blox carried out an analysis of the key data for employees based in Switzerland as of January 31, 2021, utilizing the "Logib" standard analysis tool provided by the Swiss Federal Government. As a result of this analysis, u-blox AG female employees earn on average 3.1% less than their male colleagues. This value is below the 5% tolerance threshold. Consequently, u-blox AG fully complies with the requirement of gender pay equality in Switzerland.

**Sharing success and celebrating together!**
At u-blox employees share our business success and growth with a new profit sharing Company Performance Bonus and an Employee Share Option Program.

We regularly celebrate our teamwork and success with annual company events at each location several times per year. In addition, we also celebrate globally company milestones such as our u-blox 25th anniversary in 2022, with respective jubilee events planned at each location.

**Health and safety**

It is our duty to safeguard the health and safety of every u-blox employee worldwide at work. u-blox employees undertake health and safety training as part of their onboarding process and are also personally responsible for maintaining safety, security, health, and environmental protection in the workplace relating to their own duties to the best of their knowledge, ability, and experience.

**Newly appointed global health and safety role**

At the end of 2021, we established a dedicated global health and safety management role within the u-blox global human resources team to manage and co-ordinate this critical responsibility globally. Working closely with site management, the global health and safety manager will standardize worldwide a u-blox health and safety policy, a structure with respective responsibilities, targets, and objectives. Several programs and training will be rolled out to raise awareness and be prepared for incidents. Progress will be monitored, and a reporting system will be established.

**Some areas we will focus on standardizing globally in 2022:**

- We are working to standardize our health and safety training program globally and ensure it is reoccurring on an annual basis

- Each u-blox site has a team of dedicated First Aid responders trained and equipped to support the health and safety of our employees in case of any on-site emergency

- u-blox understands the importance of an ergonomic workplace and has a policy in place to provide our staff with the individual ergonomic support they require

- On-demand webinars on personal health, resilience, and well-being are available to all staff, as are virtual yoga drop-in sessions

We also encourage our employees to bring potential health and safety issues to our attention, and we respond openly to any concerns raised. In 2021, as in the two years before, we

were pleased to report no serious work-related injuries or work-related injuries or illness. Furthermore, there were no site-wide Covid-19 outbreaks in 2021.

**Evaluation of our management approach to our employees**

Twenty-five years after our founding, there is a thriving, "Better Together", and innovative culture at u-blox. Our agile working environment, personalized employee development strategy, work-life balance, and open door/open communication policies drive employee ownership, shared success, and employee retention. We consider

the fact that u-blox people and culture continue to reflect the diversity found in the communities we work in and the markets we serve to be a meaningful contribution to sustainability.

| Pillar/ESG Goals | Goals evaluation | Goals achieved (March 2022) |
|---|---|---|
| **Employees** | | |
| **Respect our people:** Diversity, equality, and inclusion training. | Train **40%** of our staff in non-violent communication techniques. | ✓ |
| | **Number of people trained: 415, 40%** | |

# Employee indicators

**400 modules have been created on our learning platform**
Since March 2021, 400 modules have been created on the platform by our employees to empower them to share their knowledge and support other colleagues in their development and growth.

**16% of our overall workforce was female**
We closely monitor the gender balance at all levels of our business. At the end of 2021, 16% of our overall workforce was female. 52 of our senior and management level positions are held by women. At the Board of Director level, two out of seven members are women.

**u-blox has 63 nationalities represented across 31 locations**
Across all our operations, currently, in 31 locations with staff representing 63 nationalities, we promote an inclusive culture where diversity is valued, discrimination is not tolerated, and everyone is treated with dignity and respect.

**Employees can now work up to 40% from home**
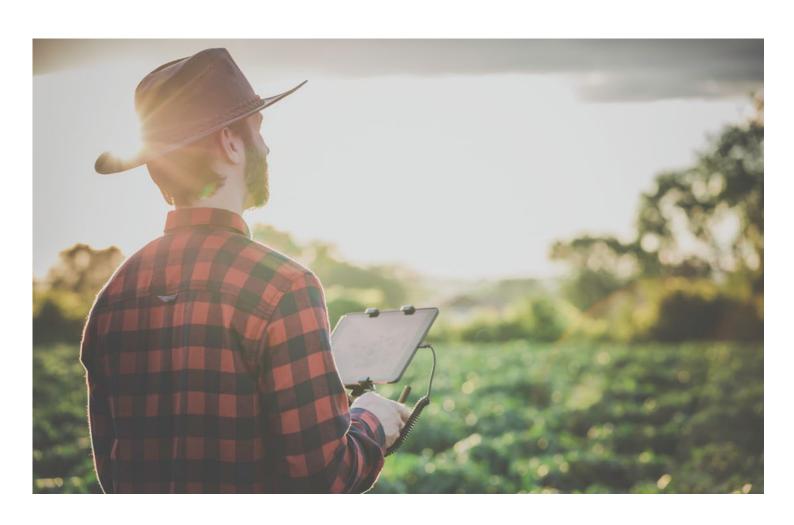In 2021, we implemented a new Remote Work Guideline flexible hybrid work model.

**91.5% of employees have permanent work contracts**
With permanent work contracts we also believe in giving our people stability in their lives and work. That's also why the vast majority of those working for u-blox are permanent employees.

**94% of respondents satisfied with our working conditions**
Over 75% of employees participated in the 2021u-blox employee engagement survey. 94% of the respondents confirmed being satisfied with their overall working conditions and working environment and 92% confirmed being satisfied with u-blox as an employer.

# 14#
# Pillar 3:
# Our environmental responsibility

### Explanation of the material topic and its boundaries

u-blox is committed to protecting our planet for future generations. We continually seek ways to make our products and operations worldwide even more environmentally friendly. Solid partnerships based on shared values that prioritize and protect the environment are essential as a fabless semiconductor manufacturer. The Environment section within this sustainability report relates to how the u-blox Executive Committee, our dedicated Global Environment team, our supplier partners, and all u-blox staff strive to protect the planet and meet our environmental responsibilities.

### Our approach to environmental responsibility

The u-blox Environmental Management System was established already in 2009 to set binding guidelines for our employees and suppliers. We have a dedicated team that manages all our environmental protection work worldwide, including checks on the fulfilment of our environmental requirements by our suppliers of parts and services, product material compliance reporting, internal training, and continuous improvement.

u-blox is a member of the non-profit organization IPC (ipc.org), a member-driven organization and leading source for industry standards, training, industry intelligence, and public policy advocacy for electronics manufacturing.

With more than 3,000 member companies worldwide, IPC represents one of the most reliable resources available. IPC provides its members with tools for environmental product compliance best practices relating to the electronics industry, including design, printed board manufacturing, electronics assembly, and test.

Our environmental team regularly benchmarks and verifies our performance in alignment with the environmental requirements of our global customer base. They often come with questions and request verification checks to ensure their environmental requirements are fulfilled. In addition to the internationally recognized environmental standards, there are sometimes region or country specific requirements.

Each year we renew our commitment to our UN Global Compact SDGs with respect to the environment. We are committed to ensuring u-blox products are produced responsibly and work exclusively with suppliers who embrace the environmental compliance and governance of our transparent and binding environmental management system.

## "A Material Declaration Sheet (MDS) or Material Composition Declaration according to IPC-1752A is available for every u-blox volume product at the homogeneous level."

### A transparent and binding environmental management system

The u-blox Environmental Management System (EMS) manual sets out binding guidelines for our employees, supporting them in fulfilling their tasks in accordance with our sustainability objectives. It is also intended as an information tool for our customers and distributors, as it provides evidence of the implementation of their requirements in our environmental management system operations.

Our EMS activities are part of the Product Life Cycle Process. Before going into production, we ensure that all evidence of compliance has been checked and recovered throughout our supply chain. We focus on legal requirements such as the EU Restriction of Hazardous Substances (ROHS) directive, the EU Registration, Evaluation, Authorisation, and Restriction of Chemicals (REACH) regulation and the linked SCIP database, the Perfluorooctanoic acid (PFOA), and Perfluorooctane sulfonic acid (PFOS) regulations, and the Halogen-Free content according to IEC 61249-2-21 standard. We also check customer specific environmental management requirements for some substances and their concentration limit values in our products.

**Environmental training and awareness**
u-blox's commitment to protecting the environment and our awareness that our operations can have a direct and an indirect impact on the environment is clearly communicated in the u-blox Code of Conduct document. Every new employee is required to review the Code of Conduct, and an annual review process is required for all existing employees.

In 2021, we introduced an e-learning training program available on our corporate knowledge base platform to inform both new and existing employees on the critical aspects of the u-blox Environmental Management System. Currently, there is a heavy emphasis on product compliance and responsible mineral sourcing with plans in 2022 to add content regarding our activities to reduce our $CO_2$ footprint.

**Data compilation and disclosure of materials**
Since 2012, a Material Declaration Sheet (MDS) or Material Composition Declaration according to IPC-1752A is available for every u-blox volume product at the homogeneous level. IPC 1752A establishes a standard reporting format for material declaration data exchange between supply chain participants and supports reporting bulk materials, components, printed boards, sub-assemblies, and products. The MDS provides a detailed list of materials, including all homogeneous substances used in the product.

An MDS for each volume product is made possible through the investment and commitment u-blox has made to environmental management compliance over many years, and transparency and by partnering with leading top-tier suppliers who share a similar commitment to environmental, safety, and health best practice.

The full material declaration data of components and materials used are compiled and provided by our manufacturing partners. For automotive grade products, we also provide IMDS to meet the obligations placed on automobile manufacturers, and thus on their suppliers, by national and international standards, laws, and regulations.

The International Material Data System (IMDS) is the automobile industry's material data system. All materials used for manufacturing automobiles are collected, maintained, analyzed, and archived into IMDS. A global standard used by almost all the global OEMs, IMDS is used to meet the obligations placed on auto manufacturers by national and international standards, including their laws and regulations.

**Maximizing the material efficiency of our products**
At u-blox, we believe that component longevity makes sense, and that sustainability is good for our customers, good for their customers,

**"We attribute our green label to all products that are both RoHS and Halogen-Free compliant, and we are committed to developing products that are as 'green' as possible and REACH compliant."**

and much better for our planet. That is why the u-blox chip team designs for zero defect, robust life span, optimal form factor, and minimum energy consumption.
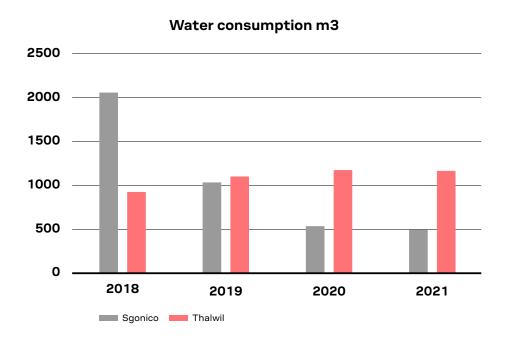
**Life span of more than a decade**
Many of our customers' products are manufactured to last and remain in use for more than a decade. Components, therefore, need to be robust, easy to maintain, and, where required, continue to evolve with Firmware Over The Air (FOTA) after they leave the factory.

**Freshwater monitoring**
In 2021, we began monitoring freshwater usage data for our two largest R&D sites in Thalwil, Switzerland, and Sgonico, Italy (below).

As expected, due to the pandemic with most staff working from home, water usage reduced year on year at Sgonico but increased in Thalwil due to building renovations taking place during staffs' absence.

**Water consumption m3**



Legend: Sgonico (grey), Thalwil (red)

**Non-use of hazardous substances in our products**

From a product material data perspective, we work closely with our suppliers and contract manufacturers to investigate and document our product compliance. We attribute our green label to all products that are both RoHS and Halogen-Free compliant, and we are committed to developing products that are as 'green' as possible and REACH compliant. Besides customer specific statements, we provide compliancy statements for all volume products as follows:

- RoHS statement according to Directive 2015/863/EU
- REACH statement based on the latest Candidate List of Substances of Very High Concern published in Annex XIV of EU chemicals regulation (EC) 1907/2006
- Halogen-Free statement according to IEC 61249-2-21
- PFOA and PFOS free statement to according to Regulation (EU) 2019/1021 and Regulation (EU) 2017/1000, respectively

**Energy management at u-blox**

In 2021, we also began monitoring our electricity usage data and converted it into $CO_2$ emissions for our three largest R&D sites at our product centers, Thalwil (Switzerland), Sgonico (Italy) and Malmö (Sweden).

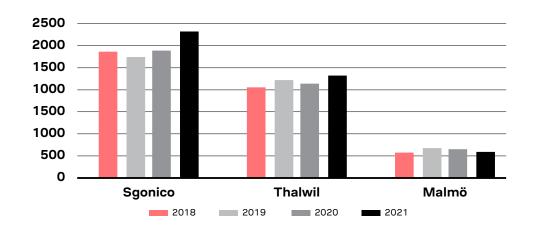**Tackling climate change together in the future**

As a global company with a footprint across five continents, we are very aware of how critical it is for each and every company, organization, and individual to take whatever steps they possibly can to help humanity progress towards reducing greenhouse gas emissions. We believe together we can significantly reduce greenhouse gas emissions and tackle climate change through a combination of technology and human/organizational change.

**Reducing our $CO_2$ emissions**

As a fabless semiconductor manufacturer, our direct impact on $CO_2$ emissions is low compared to a traditional semiconductor manufacturer fabricating in-house. However, we understand that much of our environmental footprint comes from indirect $CO_2$ emissions through the manufacturing of our products by our manufacturing partners.

Flex Ltd., our main module product manufacturer, reported their climate change data on CDP with an "A-" rating for 2021, unchanged as compared to the previous year 2020. Firmly committed to embedding sustainable practices throughout its operations, Flex builds more than 90% of the u-blox module products using 100% renewable energy. In addition, the company's Althofen, Austria facility created a real-time energy management system to monitor the flow of energy and an advanced analytics platform to

**Kg CO₂ emissions per year from electricity consumption in u-blox offices**

develop dashboards for boosting performance across production lines. In 2021, Flex's Althofen facility was admitted into the World Economic Forum's Global Lighthouse Network to recognize the site's deployment of 4.0 technologies to improve operational efficiency and agility with leading sustainability initiatives.

Amkor Technology Inc., our main chipset manufacturer, reported their climate change data as well on CDP with a "B" rating for 2021, unchanged as compared to the previous year 2020. According to the data reported by Amkor Technology Inc., the manufacturing of a single chipset in the Philippines for our positioning products typically creates 46.8 grams of $CO_2$eq.

To minimize our indirect impact on the environment, we must continue to work closely with our suppliers to control air emissions, waste management, recycling, and water management. We will continue to partner exclusively with top-tier manufacturers in our industry with leading environmental compliance and governance systems in place.

We have also implemented measures to help reduce the travel-related $CO_2$ emissions of our employees. For example, at our headquarters in Thalwil, Switzerland, u-blox covers public transportation costs for employees from home to office. As a result, and in line with our commitment as a UN Global Compact signatory to Sustainability Goal number 13 relating to Climate Action, travel emissions from u-blox headquarters will reach net zero by 2022.

### New Sustainable Green Policy

We take our responsibility to become a Net Zero $CO_2$ emitting company at our Thalwil, Malmö, and Sgonico locations seriously. We have introduced a Sustainable Green Policy to help all of us significantly reduce our business travel carbon emissions.

In the beginning of 2022, we implemented our Prevent, Minimize, Offset strategy. This means:

We will prevent the creation of $CO_2$ emissions when possible, minimize emissions and drive efficiency when we cannot avoid creating them, and offset unavoidable carbon emissions by financially supporting projects which remove $CO_2$ from our planet.

**Prevent:** Travel less and/or for shorter distances.

**Minimize:** Avoid travelling when possible and use technology to host virtual meetings.

**Offset:** Compensate for unavoidable travel emissions by investing in carbon reduction projects by myclimate. u-blox recognizes that offsetting is the weakest option and should serve only to compensate the environment for unavoidable travel emissions once all other options have been exhausted.

### Evaluation of our management approach to environmental responsibility

Each year we renew our commitment to ensuring u-blox products are produced responsibly and work exclusively with suppliers who embrace the environmental compliance and governance of our transparent and binding environmental management system.

In 2020 we started monitoring our Corporate Social Responsibility performance fulfilling the self-assessment in Ecovadis, an evidence-based online platform that allows companies to assess the ESG activities. Our first rating reached 38%, which we could enhance to 42% in 2021 thanks to some improvements in the sustainable procurement area (e.g., policy on conflict minerals, suppliers code of conduct). We are now focused on some environmental improvement areas and are implementing corrective actions to achieve a higher score by the end of 2022.

# 90%

**of u-blox modules are manufactured
with renewable energy**

Although we make progress year upon year,
we realize there remains ample potential to
minimize our direct and indirect impact on the
environment. We will continue to work closely
with our suppliers to control air emissions, waste
management and recycling, and water manage-
ment. In January 2022, we also implemented
our Prevent, Minimize, Offset strategy for three
major u-blox sites: Thalwil, Sgonico, and Malmö.

| Pillar/ESG Goals | Goals evaluation | Goals achieved (March 2022) |
|---|---|---|
| **Environmental responsibility** | | |
| **Protect the environment:** Commitments to achieve net zero emission goals in the medium term. | Develop concept and cost for $CO_2$ for **three major u-blox sites.** | ✓ |
| | **Thalwil, Sgonico and Malmö** | |

# Environmental indicators

**91% of our modules produced with renewable energy**
Between 2019 and 2021 on average more than 90% of u-blox's modules production has been made usingrenewable energy at Flex Ltd. in Althofen, Austria.

**CO₂ emissions at 3 u-blox sites will reach net zero by 2022**
In line with our commitment as a UN Global Compact signatory to Sustainability Goal number 13 relating to Climate Action, CO₂ travel emissions at three u-blox sites, Thalwil, Malmö, and Sgonico, will reach net zero by 2022.

**Tripled wafer capacity saving 66% on energy and materials**
Through an extensive miniaturization project in 2021, we have extended the number of chips produced on one wafer by a factor of 3. We deliver 3 times as many components with the same amount of silicon, precious metals, and energy, effectively saving 66% on energy and materials.

**New Prevent, Minimize, Offset - Sustainable Policy**
Beginning January 2022, we implemented our new Sustainable Policy; Prevent, Minimize, Offset strategy. This means: We will prevent the creation of CO₂ emissions when possible, minimize emissions and drive efficiency when we cannot avoid creating them, and offset unavoidable carbon emissions by financially supporting projects which remove CO₂ from our planet.

**We restrict the use of hazardous substances in production**
The production of our products meets these legal requirements:
- EU Restriction of Hazardous Substances (ROHS) directive
- The EU Registration, Evaluation, Authorisation, and Restriction of Chemicals (REACH) regulation
- Linked SCIP database
- Perfluorooctanoic acid (PFOA), and Perfluorooctane sulfonic acid (PFOS) regulations
- Halogen-Free content according to IEC 61249-2-21 standard

# 15#
## Pillar 4: Our responsible supply chain

### Explanation of the material topic and its boundaries

u-blox is committed to producing its products ethically and responsibly. As a fabless semiconductor manufacturer, solid partnerships based on shared values help ensure the u-blox supply chain complies with established international principles around labor, human rights, worker health and safety, the environment, ethics, and management systems.

This sustainability report's responsible supply chain section relates to how the u-blox Executive Committee, our dedicated global supply chain team, our supplier partners, and all u-blox staff strive to produce our products ethically and responsibly while protecting human and labor rights, health and safety, and the environment.

**"Our policy with regard to human and labor rights is very simple: there should be no abuse of any form taking place during the manufacturing of our products. This means no child labor, no trafficked labor, and no forced labor."**

### Our commitment and collaborative approach to a responsible supply chain

The u-blox Supplier Code of Conduct based on the Responsible Business Alliance (RBA) Code of Conduct is the bedrock of our commitment and collaborative approach to our responsible supply chain. All companies in our supply chain go through a rigorous and ongoing supplier risk assessment, in line with our Supplier Code of Conduct. The supplier risk assessment is followed by onboarding training and supplier capacity building when required.

### Careful supplier selection

All potential u-blox suppliers undergo a comprehensive multi-stage due diligence process, including a supplier risk assessment before we buy from them. The first part of this involves the supplier completing our self-assessment process, which includes the supplier's sector, size, and geographical location, and the type of work performed. The risk assessment looks extensively at human and labor rights risk and impact. We then review their responses, feedback on any areas that need improvement, perform on-site audits, and take corrective action if necessary.

### Continual improvement for u-blox and our partners

We are constantly striving to improve sustainability standards in our own business. This is why we look to learn from our suppliers' best practices. And this works the other way: we help our suppliers continually enhance their processes, resource efficiency, environmental and social standards.

This collaborative approach is highly effective and fosters deeper and more productive relationships between us and our supply chain partners while also benefiting the wider communities where we operate.

### No child labor, no trafficked labor, and no forced labor

Our policy with regard to human and labor rights is very simple: there should be no abuse of any form taking place during the manufacturing of our products. This means no child labor, no trafficked labor, and no forced labor. Working hours and pay must comply with local laws or the RBA Code of Conduct, whichever is stricter. Further, we require our supplier partners to provide a worker's voice hotline through an anonymous external channel so that their workers can report workplace concerns without fear of reprisal.

### Freedom of Association

As stated in the u-blox Supplier Code of Conduct, in conformance with local law, u-blox suppliers shall respect the right of all workers to form and join trade unions of their choosing, to bargain collectively, and to engage in peaceful assembly as well as respect the right of workers to refrain from such activities. Workers and/or their representatives shall be able to openly communicate and share ideas and concerns

with management regarding working conditions and management practices without fear of discrimination, reprisal, intimidation, or harassment.

**Health and Safety**
As outlined in the u-blox Supplier Code of Conduct, u-blox suppliers must recognize that in addition to minimizing the incidence of work-related injury and illness, a safe and healthy work environment enhances the quality of products and services, consistency of production and worker retention, and morale. u-blox suppliers should also recognize that ongoing worker input and education is essential to identifying and solving health and safety issues in the workplace. Recognized management systems such as OHSAS 18001 and ILO Guidelines on Occupational Safety and Health were used as references in preparing the Code. Further information about the u-blox Supplier Code of Conduct as it relates to health and safety can be found here:

Read Supplier Code of Conduct[1]

**Suppliers who embrace environmental compliance and governance**
As part of our Environmental Management System, we develop and publish detailed guidelines for our suppliers. The headline requirements are that all our contract manufacturers must hold ISO 14001 certification. Suppliers

of components, materials, and parts are highly recommended to be ISO 14001 certified. Fabless companies should maintain an environmental management system and request that their production partners be ISO 14001 certified.

Much of our environmental footprint comes from manufacturing our products. To minimize this, as a fabless company, we must work closely with our supplier partners to control air emissions, waste management and recycling, and water management. Each of our suppliers has policies and strategies to deal with these very important issues, and u-blox monitors its operations closely. In addition, we cooperate exclusively with top-tier manufacturers in our industry with leading environmental compliance and governance systems in place.

**Our commitment and approach to responsible mineral sourcing**
Conflict Minerals regulation through Section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act, enacted in 2010 by the US federal government, focuses on regulating the exploitation and trade of conflict minerals in the Democratic Republic of Congo and adjoining countries.

"Conflict Minerals" include cassiterite, columbite, tantalite, wolframite (and their derivatives Tin, Tantalum, and Tungsten), and gold.

[1] https://content.u-blox.com/sites/default/files/Supplier_Code_of_Conduct.pdf

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**"As a responsible business, it is incredibly important to us that our work does not contribute to any conflict, anywhere in the world. That is why part of our supplier selection process addresses the issue of conflict minerals, to ensure these do not end up in any of our products."**

According to Section 1502, the US Securities and Exchange Commission (SEC) requires all publicly reporting companies for which conflict minerals are "necessary to the functionality or production" of manufactured products to examine the use of conflict minerals in their entire supply chain and to disclose the origin of the minerals.

u-blox is not an SEC-regulated organization; nevertheless, we are committed to the responsible sourcing of minerals and fully support Section 1502 of Dodd-Frank to not contribute to any human rights abuses around the globe or finance armed groups directly or indirectly. u-blox uses the RMI Conflict Mineral Reporting Template (CMRT), and we regularly disclose both smelters and their country of origin.

In 2020, we started to investigate cobalt in our due diligence program for the responsible procurement of minerals voluntarily related to social and environmental responsibility in the supply chain and published our first Cobalt Report using the Cobalt Reporting Template (CRT).

Learn more about the u-blox Responsible Minerals Sourcing Policy[1]

As a responsible business, it is incredibly important to us that our work does not contribute to any conflict anywhere in the world. That is why part of our supplier selection process addresses the issue of conflict minerals to ensure these do not end up in any of our products.

u-blox suppliers, including contractors and external manufacturers, are aware of their obligations towards responsible minerals sourcing through our Supplier Code of Conduct. Accordingly, they are requested to have a policy to reasonably assure that the minerals they source are conflict-free. They are also expected to exercise due diligence on the source and chain of custody of these minerals and make their due diligence measures available to u-blox upon request.

**Updated supplier risk assessment/ segmentation**
In 2020, we set the goal to gain more in-depth insight into our supply chain to improve supplier engagement, learn more about their practices, prioritize resources and thereby increase our opportunity to maximize impact.

We began by working with a highly competent external ESG consultancy with extensive experience in Responsible Supply Chain Management (RSCM) to analyze fifteen of our tier-1-suppliers in 10+ countries by aligning our pre-risk assessment supplier and sourcing data (company-specific leverage) with their proprietary segmentation approach.

[1] https://content.u-blox.com/sites/default/files/u-blox_conflict_minerals_summary.pdf

**65**

u-blox's "leverage" data (spend, supplier location, duration of relationship) was then combined with their industry-leading proprietary data engine for risk categories and supply chain geography to identify key supply chain risks. This was then followed by desk research on five suppliers' approaches regarding responsible supply chain management as a complementary element to the risk data.

A u-blox supplier risk landscape analysis and segmentation report were generated to guide our medium to long-term approach and help us prioritize resources and maximize impact. Today, 90% of our modules and 100% of our chipsets are manufactured in low risk countries at locations committed to the supplier code of conduct based on the Responsible Business Alliance (RBA) practices.

**With a view to the future**
Our next steps along our path to maximizing responsible impact within our supply chain are to update our Supplier Code of Conduct and Supplier Self Assessment Questionnaire SAQ and implement these updates with the relevant tier-1 suppliers. Further, we plan to mitigate social, environmental, health and safety, and ethical risk if identified by conducting 1 audit (online or on-site).

**Evaluation of our management approach to the supply chain**
Our approach helps ensure the u-blox supply chain complies with established international principles around human and labor rights, worker health and safety, the environment, ethics, and management systems.

| Pillar/ESG Goals | Goals evaluation | Goals achieved (March 2022) |
|---|---|---|
| **Business ethics and supply chain responsibility** | | |
| **Do business the right way:** Increased audit capacity and intensity, particularly related to human and labor rights. | Define scope and **run one audit** with a business partner. | **No audit** ⊗ |
| | **We completed the risk analysis, desk research. By March 2022 we will have defined the roadmap.** | ⊘ |

# Supply chain indicators

**No child labor, no trafficked labor, and no forced labor**
As a signatory of the UN Global Compact u-blox fully supports and respects the protection of internationally proclaimed human rights; and works diligently to make sure that we are not complicit in human rights abuses.

**Our production partners commit to RBA practices**
90% of our modules and 100% of our chipsets are manufactured in low risk countries at locations committed to the supplier code of conduct based on the Responsible Business Alliance (RBA) practices.

**Extensive supplier due diligence and risk assessment**
All u-blox suppliers go through a comprehensive multi-stage risk assessment prior to onboarding.

**UN Global Compact principles on labor 3, 4, 5, and 6**
As a signatory of the UN Global Compact u-blox fully upholds the freedom of association and the effective recognition of the right to collective bargaining; the elimination of all forms of forced and compulsory labor; the effective abolition of child labor; and the elimination of discrimination in respect of employment and occupation.

**All our contract manufacturers are ISO 14001 certified**
u-blox requires all contract manufacturers to hold ISO 14001 certification.

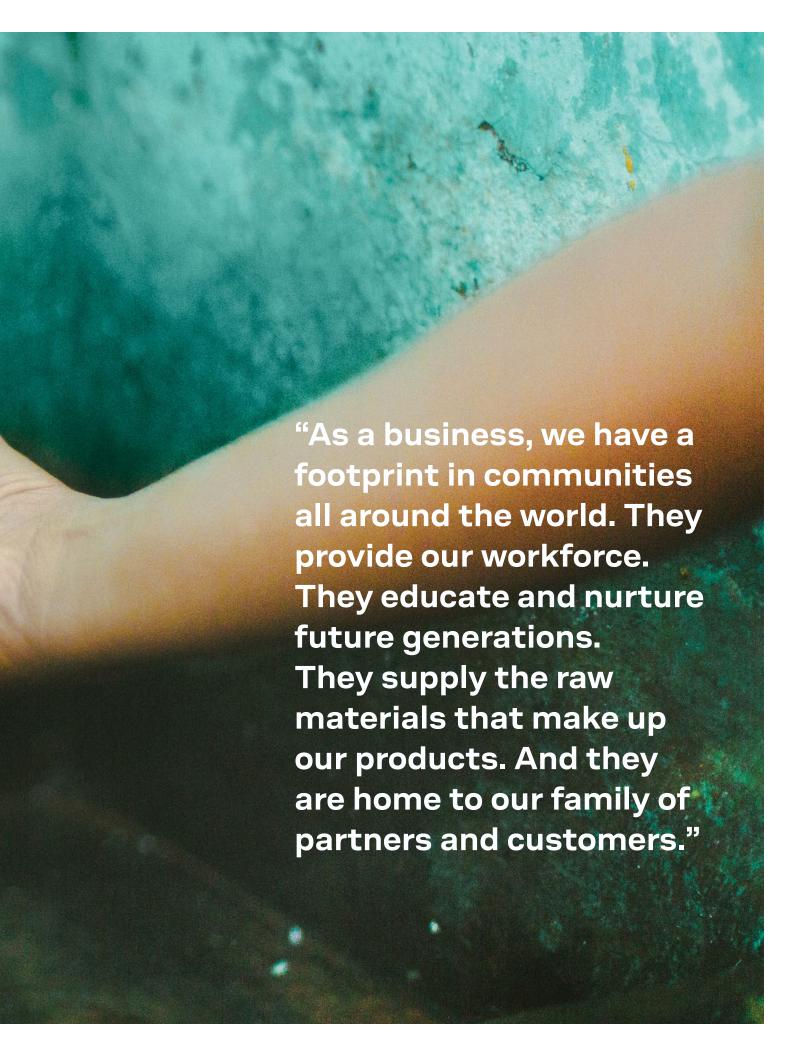**u-blox began to investigate cobalt in 2020**
In 2020, we also started to investigate cobalt in our due diligence program for the responsible procurement of minerals voluntarily related to social and environmental responsibility in the supply chain and published our first Cobalt Report using the Cobalt Reporting Template (CRT).
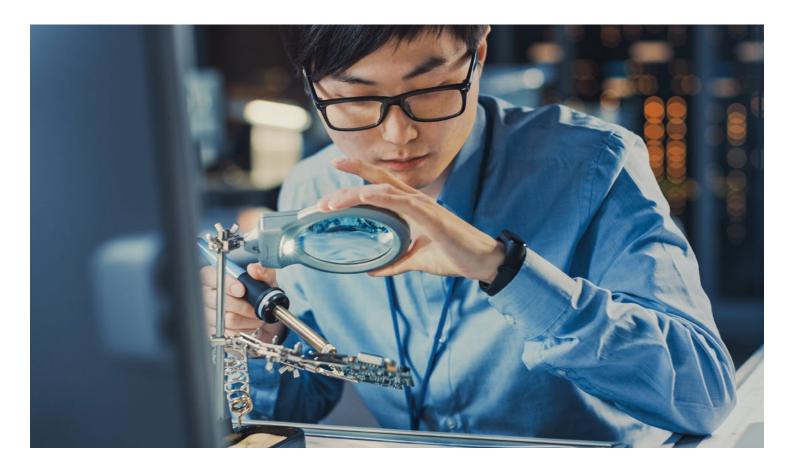
**u-blox adheres to the regulation of Conflict Minerals through Section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act**
u-blox is not an SEC-regulated organization; nevertheless, we are committed to the responsible sourcing of minerals and fully support Section 1502 of Dodd-Frank to not contribute to any human rights abuses around the globe or finance armed groups directly or indirectly. 90% of our modules and all our chipsets are manufactured by sourcing minerals by either (mostly), or active 3TG smelters, as identified by the RMI with a 100% rate of suppliers who have responded to our 3TG supply chain surveys.

# 16#
# Pillar 5:
# Community

"As a business, we have a footprint in communities all around the world. They provide our workforce. They educate and nurture future generations. They supply the raw materials that make up our products. And they are home to our family of partners and customers."

**Explanation of the material topic and its boundaries**

We believe in building sustainable communities around the world. And u-blox is contributing in various ways: we donate our technology, make financial contributions, encourage and incentivize employees to offer their expertise, and work with educational establishments to support learning.

A key focus of our work with communities is to inspire the next generation around science, technology, engineering, and mathematics (STEM) and ultimately encourage more people to pursue careers in this area.

As a business, we have a footprint in communities all around the world. They provide our workforce. They educate and nurture future generations. They supply the raw materials that make up our products. And they are home to our family of partners and customers.

We could not do business without the support of these communities in all corners of the world. This is why it is so important we support them in return. The expertise of our people, coupled with the capabilities of our technologies, means we can make a meaningful difference to communities in ways few other organizations can.

**Our approach to community**

The u-blox Community Involvement Strategy is delivered through four key programs that we combine wherever appropriate to create maximum benefit:

- Corporate giving
- Product donation
- Employee volunteering
- Education

**Product donation**

# charity: water

**Each year u-blox contributes to helping build sustainable communities through product donation to IoT innovators around the globe - supporting them as they leverage the power of IoT to help others. u-blox and charity: water partnered in the beginning of 2021 to leverage the power of IoT to bring clean drinking water to the world's most vulnerable**

**Sensor devices create a new path for water sustainability**

Founded in 2006, charity: water has been chasing one ambitious goal: ending the global water crisis. 785 million people lack basic access to clean and safe drinking water. And while the water crisis is huge, they are optimistic because they know how to solve the problem, and thanks to the help of local partners and generous supporters, they are making progress every day. charity: water believes if we work together, everyone will have access to life's most basic need within our lifetime.

As part of charity: water's efforts to guarantee the sustainability of water projects, a special program to develop a remote sensor device was launched in 2012. Since then, charity: water has deployed over 7,000 sensor devices across Africa and Asia.

**"charity: water created a new path for sustainability in the water sector when they invented the first-ever remote sensor to monitor rural water points and put the power of leading-edge IoT and cloud computing technology to work for the world's poorest people."**

**Rolling out across Uganda, India, and Ghana**
Now devices of a new model developed by charity: water – the India Mark II hand pump - has been rolled out across Uganda, India, and Ghana utilizing SARA-U201 cellular modules and MAX-8C GNSS modules donated by u-blox. This provides water to approximately 100,000 people.

"Our engineers specified the u-blox SARA-U201 and MAX-8C modules for the initial build of our new India Mark II hand pump", explained Christoph Gorder, Chief Global Water Officer, charity: water. "When we approached u-blox about our project and its potential impact, they were really supportive, both in terms of donating the modules and by providing our team with technical support integrating to our cloud. We are looking forward to a long and impactful partnership with the team at u-blox."

**"When charity: water and u-blox innovation converge to provide some of the world's most vulnerable people with clean drinking water, we are happy to be of support and look forward to working together into the future," said Thomas Seiler, CEO, u-blox.**

**A new path for sustainability in the water sector**
charity: water created a new path for sustainability in the water sector when they invented the first-ever remote sensor to monitor rural water points and put the power of leading-edge IoT and cloud computing technology to work for the world's poorest people. The innovation generates an unprecedented amount of data, at a nominal cost, on the performance of water systems in rural communities across the developing world. This data empowers public and private sector actors to rapidly identify and respond to breakdowns, avoid service interruptions, and

ultimately create the tools to build a pay-for-results financing model for future infrastructure investments.

charity: water technology is designed to serve the demands of the most isolated and small communities, transforming the entire maintenance model in remote areas - improving everything from upkeep schedules to payment models -reducing downtime and keeping water flowing. What is most unique about charity: water devices are their scalability and affordability. $250 is the cost for each sensor device, including 10 years of data transmission - less than 2% of the cost of a drilled well.

**Inside the India Mark II hand pump**
The voice and data capable u-blox SARA-U201 supports a wide range of industrial and automotive telematics and consumer applications that must be able to operate on any 2G or 3G network in the world. The u-blox SARA-U201 in each charity: water India Mark II hand pump is pre-integrated with a u-blox AssistNow client connecting it to the MAX-8C GPS module (optimized for cost sensitive applications with the lowest power consumption) and transmitting real-time data to the charity: water cloud.

# NaviBlind

**When the launch of ZED-F9P and Jonathan's concept converged:
NaviBlind was born**

**NaviBlind's vision is to empower blind and visually impaired people to
walk to new destinations independently**

With a background in biotechnology, pharma-ceuticals, healthcare, and health technology, Jonathan Sonne Andersen had a vision for a business idea when he was working as a researcher at the University of Copenhagen in Denmark.

The idea crystallized as his sister was telling him about her friend Emil who was blind from birth and had recently moved to Copenhagen to attend university and had to learn how to navigate walking around his new neighborhood, campus, and city.

**This could be it. This could be big!**
On a spring day in 2018, Jonathan met Emil to discuss his concept, and within weeks, they were out testing the prototype, which demonstrated proof of concept. Throughout the summer, Jonathan tested numerous GNSS solutions. Unfortunately, none had the accuracy he was looking for or were too bulky and unaffordable. Then in late autumn, he discovered and ordered the newly released u-blox ZED-F9P multi-band high-precision GNSS module.

"I clearly remember the day I went to the post office, and the package from u-blox was there. I rushed home and told my girlfriend; this could be it. This could be big! As I tested the ZED-F9P with my app on the u-blox u-center – I had this yes feeling that we'd finally found a precise enough GPS to realize our business idea. The F9P was the first mass market multi-band receiver to concurrently use GNSS signals from all four GNSS constellations (GPS, GLONASS, Galileo, and BeiDou) with integrated multi-band Real-time Kinematics (RTK) technology to achieve centimeter-level accuracy in seconds – even in challenging environments such as in cities. The u-blox ZED-F9P was also affordable, compact, and had low power consumption – precisely what my concept needed."

**Blind and visually impaired people can typically only walk to five places**
Jonathan was surprised to learn the first day he met Emil that even with today's smartphones, blind and visually impaired people still depend on other people to learn how to walk to new places. And even with professional assistance, most

**"The conventional way of learning how to navigate a route as a blind or visually impaired person requires many hours of one-on-one training with a mobility instructor and extensive planning."**

blind and visually impaired people can typically only walk to five places on their own. Moreover, the conventional way of learning how to navigate a route as a blind or visually impaired person requires many hours of one-on-one training with a mobility instructor and extensive planning. With the World Health Organisation (WHO) estimating in 2010 that about 285 million people around the world are living with blindness or visual impairment – it would be extremely cost-intensive to provide this type of training to all people with low vision.

**NaviBlind was born**
By 2019 NaviBlind was founded by Jonathan and his new business partner Per Friis to develop a navigation app, which would enable blind and visually impaired people to walk to as many places as they like, independent of other people. NaviBlind's business model is based on innovating how blind and visually impaired people walk to new places. After a robust testing phase with 100 users, NaviBlind recently launched the product in Europe and estimates approximately 25 million people worldwide would benefit from using the app.

The NaviBlind GPS accessory leverages the u-blox ZED-F9P, which connects to the NaviBlind app via Bluetooth to deliver the essential positioning quality required for allowing blind and visually impaired people to access the outdoor world independently via precise voice navigation. The app also helps the user stay within the bounds of sidewalks and pedestrian crossings to avoid potential danger - such as walking onto car lanes. These features require a very accurate location service, which most smartphones' internal location systems can't possibly deliver. A regular smartphone can produce significant position errors, sometimes more than ten meters.

**Rolling out in Europe**
Jonathan and Per together with a talented team of software and hardware developers and scientific and business advisors have taken his idea from concept to a market-ready service now rolling out in Europe. By working initially with municipalities and healthcare organizations in Denmark, NaviBlind is empowering blind and visually impaired people so that they can remain safe and independent while walking wherever they choose.

Watch video: https://www.naviblind.com/

Product donation

# No Isolation

**A robotic Avatar AV1 becomes a child's eyes, ears, and voice in the classroom.**

**Loneliness is a serious and growing public health issue**

No Isolation design, manufacture, and market user-led devices that help excluded groups – such as the elderly and children with long-term illnesses – reconnect to society. With its user-centered design approach, No Isolation has become a leading proponent of 'warm technology' – defined as technology that seeks to accommodate human behavior and meet emotional needs rather than replacing them.

u-blox and No Isolation began working together seven years ago on the robotic avatar AV1. Designed to enable children who cannot leave home because of long-term illness to join school lessons, parties, and other activities, AV1 streams audio and video in real-time so that the children can interact and reduce their sense of isolation. In 2020, AV1 enabled 1,500 students across Europe to attend 20,000 days of school they would have otherwise missed.
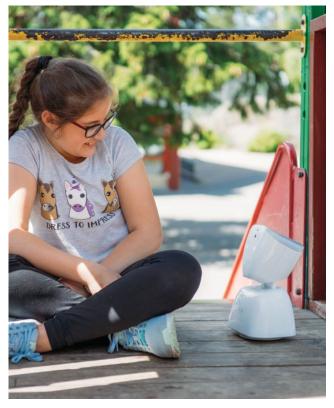
The growing need for warm technology worldwide and a favorable market acceptance has put No Isolation on an expansion path across Europe. As a result, they have opened regional offices in the United Kingdom and Germany. The company has also recently received significant

**"Loneliness is a serious and growing societal and public health issue that can affect anyone, regardless of demographic, age, or education. The effects of loneliness – and the social isolation that often causes it – can be profoundly damaging not only to our mental health but to our physical health as well, explains Harriet Gridley, Chief Impact Officer, No Isolation."**

rounds of investor funding to develop its AV1 and Komp product lines further.

**Sustainability ethos guides strategy**

No Isolation's sustainability ethos guides company strategy and product development.

To ensure their products are as environmentally sustainable as possible, they approach the warm technology market with three principled programs:

- Retain product ownership (RPO): We strive to rent our devices, so many people can benefit from each device.
- Product life extension (PLE): We strive to make high quality products that will continue to be useful for many years.
- Design for recycling (DFR): As much as possible, we design our products so the components can be reused and recycled.

**Committed to UN SDGs**
No Isolation is also committed to gathering insight and finding solutions to several UN Sustainable Development Goals (UN SDGs).

**UN SDG 4 Quality Education**
By 2030, ensure that all girls and boys complete free, equitable, and quality primary and secondary education leading to relevant and Goal-4 effective learning outcomes.

Through their work with school absence, No Isolation has gained valuable insight into the challenges related to inclusion and school attendance. They believe that society needs to have a better overview of the causes for absence to track how many children are deprived of a good education. Access to education through digital solutions, such as AV1, is also vital to providing all children with a good education.

**UN SDG 4 Good Health and Well-Being**
By 2030, reduce by one-third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being.

No Isolation believes that loneliness and social isolation are health hazards. Good mental health and quality of life ensure that seniors can live at home for longer, fewer people will need assistance from health services, and people will, in general, live longer. No Isolation products are developed and designed to increase well-being and quality of life.

**UN SDG 10 Reduced Inequalities**
By 2030, empower and promote the social, economic, and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status.

Children and young adults with a high level of school absence can be unsuccessful in completing their education and are also at risk of being excluded from social, political, and economic development. By offering solutions like AV1 to children and young adults with long-term absences, these students will continue to be included in their communities. In addition, with products such as Komp, seniors can be independent and remain a part of their network by having frequent contact with their loved ones.

# Search and rescue of young deer with GNSS and infrared

The u-blox uGive program supports our employees to volunteer for the cause of their choice. We donate CHF 20, up to a maximum of CHF 800, for each hour of volunteering. Over the years, many organizations have benefited from uGive. From the Scouts Australia to the Guide Dogs for the Blind in the UK and the Italian bone marrow donor association (ADMO) - u-blox employees are actively helping others.

Thomas Christen, u-blox Senior Director Product Development Positioning and uGive volunteer, co-founded Fawn Rescue Knonaueramt and Zug, a nonprofit organization in Switzerland dedicated to saving young deer from a painful death.

### Farmers, hunters, and drone pilots
In what would perhaps be an unlikely combination in many countries, in Switzerland, farmers, hunters, and drone pilots are working together to rescue fawns.

Across the country, hunters are trained, tested, licensed, and regulated by the Swiss government and work in cooperation with the Swiss farming community as stewards of the environment. They endeavor to help maintain a healthy balance between forest, field, and wildlife. Furthermore, Swiss law protects young deer who might otherwise experience a painful death at the blades of the farmers' combine harvesters.

### Over 3,000 fawns die tragically in Switzerland each year
Traditional search and rescue methods used by farmer/hunter teams prior to haymaking are not always effective because the fawns instinctively curl up into a tiny ball, press themselves into the uncut hay and become silent. This biological defense mechanism has kept them safe from predators for thousands of years but does little to protect them from the fast-approaching combine harvester. By instinct, they do not jump up and run away. Instead, they duck down and wait for the danger to be over. Each year, over 3,000 fawns die tragically from hay mowing across Switzerland.

### Founding Fawn Rescue Knonaueramt and Zug
In 2020, Thomas Christen turned fifty and decided he would do something for himself that year that he had long wanted to do – leverage u-blox positioning technology to prevent the painful death of young deer in the countryside

where he lives. Along with his colleagues Christoph Häfliger and Vesa Pajasmaa, Thomas founded a nonprofit organization to train, equip and support fawn rescue drone pilots.

**Drones and infrared cameras to the rescue**
When a farmer is ready to harvest the hay, they contact the hunter in their area, who then reaches out to a fawn rescue charity for drone pilot assistance.

By combining drones outfitted with Global Navigation Satellite Systems (GNSS) technology and infrared cameras, a team of dedicated volunteer fawn rescue pilots join farmers and hunters spanning out across the Swiss countryside each spring to search, find and rescue as many young deer as possible – hayfield by hayfield.
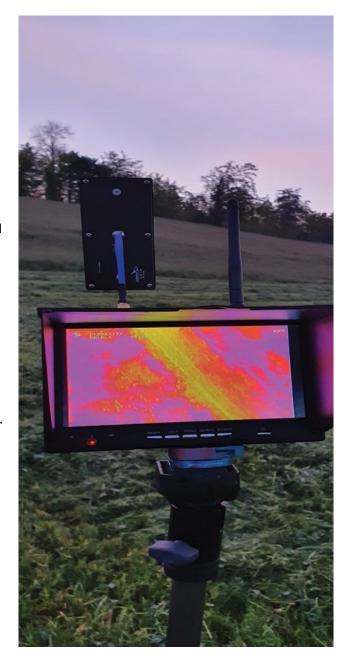
Depending on altitude, deer typically give birth each year from early May until mid-July. However, this is also an important season for hay production. Thus, the fawn rescue teams search thousands of hectares over one weekend. Rescue days begin early as a fawn's external body temperature is 28 degrees centigrade, making it detectable by the infrared camera in contrast to the uncut hay in the field during the morning hours. After 8:00 am, the temperature difference begins to narrow, making it more difficult to identify the young animals via infrared technology.

When a fawn is spotted by the infrared camera, the hunter heads out into the field to find the deer and remove it from harm's way. The fawns are placed just outside the field so their mothers, usually waiting nearby, will find them.

**Search and rescue over 16,318 hectares**
200 rescue teams and a total of 319 volunteers utilizing GNSS drones and infrared cameras flew search and rescue over 16,318 hectares in 2021 saving 2,569 young deer - almost twice as many as the year before.

In the past, with traditional search and rescue, it would take 2 hours to search and clear a hayfield. With the use of technology, the same field can be searched and cleared in 10 minutes.



"**200 rescue teams and a total of 319 volunteers utilizing GNSS drones and infrared cameras flew search and rescue over 16,318 hectares in 2021 saving 2,569 young deer - almost twice as many as the year before.**"

**u-blox**

# Corporate Giving

**Disaster aid, India**

u-blox maintains an annual Disaster Aid program to help those struck by unexpected events. In 2021, the u-blox Disaster Aid program supported the AmeriCares India Foundation COVID-19 response across 21 states and 170 hospitals. The u-blox donation helped buy critical PPE, ventilators, oxygen concentrators, and oxygen plants.

**Masks for colleagues and others in need**

It all began at the onset of the pandemic in 2020, when the u-blox Global Human Resources team in Thalwil, Switzerland, discovered that our five u-blox sites in China were in lockdown, and many of our colleagues there did not have access to masks. u-blox Switzerland sourced and sent masks to our sites across China. Shortly after, mask shortages began in Europe, at which point masks were readily available again in China. Our u-blox colleagues in China reciprocated by sending masks to Switzerland.

When u-blox colleagues in Italy heard there were masks at u-blox in Switzerland, they requested masks for their local hospital. Staff in Thalwil also distributed masks to five residential homes for the elderly in the area that desperately needed them.

# Savannah Education Trust

It was a trip in the year 2000 with friends to Sub-Saharan Africa and one of the poorest regions of Ghana that sparked the idea for what was to come. Savannah Education Trust is a charity registered with the UK government working with the government in Ghana to build schools and provide education to the villages in the northern part of the country.

The hot, dusty, and harsh climate fascinated Howard when his friend took him to his home village of Bagri. Situated in the northwestern corner of Ghana, he admired the wide-open savannah grasslands and the graceful Black Volta River, which creates the border with Burkina Faso.

**"Right from the start, we wanted to come up with a model we could replicate and grow," explains co-founder Howard Hickman. "Sixteen years ago, we built the first school. We are up to ten schools now."**

This remote area of Ghana is populated by subsistence farmers making a living from what they can grow or raise to sustain themselves on small family-owned plots of land.

When the village chief asked Howard and his friends if they would build a school in the village, they didn't think anything of it, but the seed was planted.

### The first school
Five years later, Howard and his friends Paul and Stephen Ramsbottom set up the charity began fundraising and building. With no internet connectivity and little infrastructure for communication, they sent out disposable cameras to monitor building progress.

When they returned to Bagri in 2006, they were astonished to find a beautiful blue school in the middle of the savannah grasslands.

### Focus and model
Savannah Education Trust's focus and model has remained the same since its founding; build schools, feed the pupils, give them the resources they need, and train the teachers.

Cruising to school on the Black Volta River in northwestern Ghana.

The benefits of building a school in a village are multiple and go far beyond primary and secondary education. Villagers quickly get used to bringing their children there, have a place to gather, communicate and carry out helpful community activities such as vaccinations.

Only two other schools have been built in the district in the last sixteen years other than the ten schools built by Savannah Education Trust. When they find a village with no school, all the children are in the fields digging peanuts and shelling them for sustenance.

Savannah Education Trust's aim is to give all the pupils their basic education so they can take their national exams. This eleven-year education has a transformative effect, and the lasting impact is huge.

The first thing Savannah Education Trust does in a village is put in a well and then build the school. The building model is identical from site to site and includes a primary school, a nursery school, a junior high school, and toilet facilities.

**Getting girls into education**
In this region of Ghana, girls are typically responsible for looking after their younger siblings. Providing a nursery school and toilet facilities are critical to getting girls into school. Putting the necessary infrastructure in place is working, with girls comprising 50% of Savannah Education Trust's students in a region where 35% of girls do not attend school.

**On the ground in Ghana**
The Savannah Education Trust team in Ghana manages the day-to-day operations of the schools. They are the grassroots support team

**Putting the necessary infrastructure in place is working, with girls comprising 50% of Savannah Education Trust's students in a region where 35% of girls do not attend school.**

on the ground for the children. Even though a village school and infrastructure exist, if the school children were not fed, they would be in the fields working or finding food for themselves.

**Training aspiring teachers**
Recruiting teachers for remote schools is very challenging, although the government of Ghana pays the teachers their salaries. Sometimes candidates don't have the grades to get into teacher colleges. Savannah Education Trust helps aspiring teachers by giving them the training to enter teacher colleges with the understanding that when they qualify, they will come back to teach at their schools for several years.

The district's 'Paramount Chief' wanted to recognize Howard and his co-founders' contributions publicly. In appreciation, Howard was made a 'Maalu Naa,' which means Development Chief in the local language. His ceremonial staff is proudly on display in his office back home in the UK.

**u-blox funded the primary school in Mettoh**
In 2013, Howard, who, in addition to co-founding Savannah Education Trust, is a Team Coach/Scrum Master at u-blox, reached out when they knew u-blox was looking for a Corporate Giving project in Africa focused on education.

u-blox funded the construction of the new primary school in Mettoh. Other donors funded the construction of the nursery and the junior high schools. Ongoing support for the entire Mettoh site, including maintenance and providing food for the, to date, 336 school children enrolled there, is funded by u-blox each year.

**"It's been an amazing journey, the villages have grown beyond what we could have imagined, and the schools are the biggest thing that has happened here in hundreds of years."**

# ADES is reforesting Madagascar

When they began working together over ten years ago, ADES (Association for the Development of Solar Energy) in Madagascar was one of u-blox's first sustainability partners.

Benefitting from both u-blox corporate giving and product donation programs, ADES produces and sells energy-efficient cooking stoves, reduces deforestation, mentors its stove resellers to become social entrepreneurs, and educates primary school children across Madagascar about how to care for their environment.

**"In the last 10 years, u-blox has saved 60,480 tons of CO₂ through ADES projects."**

**510,00 hectares of forest lost in 2020**
With over 510,00 hectares of forest lost in 2020, Madagascar is on a trajectory for continued deforestation, loss of biodiversity, climate change, and food scarcity. It is also one of the

poorest countries and the fourth largest island in the world. Most of the massive loss of forest each year is due to poor agricultural practices, and that 90% of the population cook on open wood or charcoal fires.

With 10% of profits going back into reforestation, tree planting has always been at the heart of ADES, with over 100,000 trees planted in 2021. Spearheaded by Herbert Blaser, Head of Product Center Short Range Radio at u-blox, the reforestation project maintains its own green center for saplings and works with local communities across the country for planting. Herbert, who has supported ADES for over 10 years as a volunteer, was elected President of the Board of ADES in 2021 and plans on doubling the number of trees planted in 2022 to 200,000.

Severe drought in the southern region of Madagascar has brought with it food scarcity and hunger. Within the communities where ADES has ongoing reforestation projects, the villagers were able to sustain themselves by growing food in the shade provided by the replanted trees and vegetation.

**"ADES has provided environmental education to over 80,000 primary school children in the last 10 years."**

**"In addition to the 50-70% energy savings, an ADES stove saves 500 hours per year on wood collection."**

**Pandemic shift**

Soon after the World Health Organization declared the Covid-19 outbreak a pandemic, like many countries, the government of Madagascar closed its borders to international flights. Tourism dried up entirely, taking a heavy toll on the economy. The ADES team was bracing themselves for a reduction in sales of their energy-efficient cookstoves – instead, sales have almost doubled from what they were at the end of 2019.

**Now selling almost twice as many cookstoves**

As the price of charcoal and wood skyrocketed, the people of Madagascar realized the savings they would have by purchasing an ADES cookstove. An ADES cookstove saves a minimum of 7.5 KG of wood or 2.5 KG charcoal per day, representing, on average a 50% cost and energy savings per day per family.

**Saving 80% biomass with industrial cookstoves**

ADES is producing energy-efficient industrial cookstoves for school kitchens which save 80% in biomass. Cooking in most school kitchens in Madagascar is still done with open wood or charcoal fire. Typically, each child brings one piece of wood with them to school each day to cook their lunch. In 2021, six school kitchen stoves were converted from open wood fire with plans to convert another ten in 2022.

**A new metal bucket factory in Antananarivo**

With the demand for cookstoves increasing, ADES has decided to build another factory in the capital city of Antananarivo to help meet the significant market demand in the northern part of the country. This new factory will deliver up to a maximum of 80,000 metal buckets alongside the two existing factories. The metal buckets

are produced in the southwestern region of Madagascar and now also in Antananarivo. The clay core production is located in the central part of the country in Fianarantsoa.

**ADES recognized by the Department of Education**
After ten years and 80,000 students, the Department of Education in Madagascar has authorized ADES to offer its 'Protecting the Environment' curriculum across the entire primary school system to students aged 8 and 9.

**Women's Empowerment Project in 2022**
ADES has also been able to establish a gender plan for the first time to outline how they will be educating their resellers and staff in the future. Having experienced first-hand through their recent recruitment process how very few female applicants they received for management positions, they believe educating and empowering women is important.

Given that women make up 80% of ADES cookstove resellers, now, in addition to training them on how to use the cookstoves, they will be mentored on how to build a business plan to
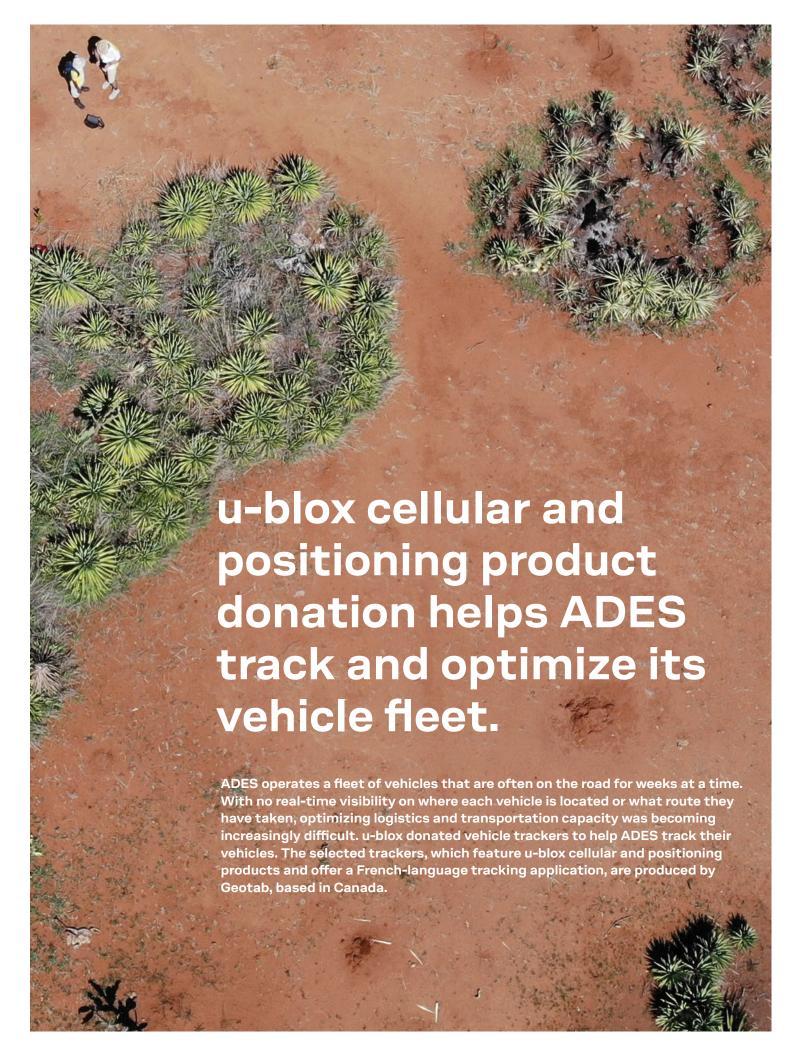
generate income by selling the stoves. Further social entrepreneurial courses will be rolling out in 2022 to support ADES resellers should they want to extend their product offering to washing stands, parabolic cookstoves, drying fish, potato chips, and other foodstuffs.

**Local leadership and a growing social enterprise**
With the growth of cookstove production, more reforestation, and more education, ADES Increased its headcount from 150 to over 200 people by the end of 2021 with plans to employ another 60 people in 2022.

Suddenly having grown from a small to a medium-sized enterprise, the ADES board realized they needed to recruit local management talent. New positions for Production Manager, Marketing Manager, and Chief Financial Officer were created and filled.

"I can really see the shift. The executive roles are taken seriously, and ideas are coming from Madagascar rather than being initiated in Switzerland. We consider this to be a major achievement," explains Rita Bachman, CEO ADES Switzerland."

# u-blox cellular and positioning product donation helps ADES track and optimize its vehicle fleet.

ADES operates a fleet of vehicles that are often on the road for weeks at a time. With no real-time visibility on where each vehicle is located or what route they have taken, optimizing logistics and transportation capacity was becoming increasingly difficult. u-blox donated vehicle trackers to help ADES track their vehicles. The selected trackers, which feature u-blox cellular and positioning products and offer a French-language tracking application, are produced by Geotab, based in Canada.

# STEM Education

**uCan at u-blox**

uCan – is a new program at u-blox encompassing our STEM (science, technology, engineering, and mathematics) education activities worldwide, one of our main areas of focus within our sustainability strategy. Engineers are critical to our future success – and there are not currently enough coming through our education systems, especially female engineers.

We partner with local and national organizations dedicated to STEM education, open our company's doors each year to welcome young girls and boys into the world of IoT, and we make product and technology support donations to students' STEM projects.

**Swiss National Future Day**

We take part in the annual Swiss National Future Day, when we open our doors to girls and boys, showing them what a career as an engineer could involve through a variety of hands-on activities.

**Sparking the imagination and talent of the future**

We support two Swiss based STEM organizations: Engineers Shape Our Future and Schweizer Jugend Forscht. These organizations provide a range of exciting workshops for students, giving them hands-on engineering experience to stimulate their interest in engineering and technology.

Schweizer Jugend Forscht also provides a STEM study week for students aged 10 – 13 in collaboration with a Swiss university. As well, they hold a national STEM contest each year targeting students around the age of 18 whom an expert coaches for several months.

Elsewhere, we also sponsor a range of university programs and code clubs, including the FooCafé in Sweden. At the university level, we continually sponsor research projects related to wireless technology to contribute to the further improvement of our products' core technology.

**Why did fifteen-year-old Jan-Ole want to invent a 'Klimabox' for his high school classroom?**
"I've always been fascinated with the way hardware and software converge to make things possible, says Jan-Ole from his home in Hamburg, Germany. "I started out designing a 'smart box' to control heating and air conditioning. But then when the pandemic hit - I wanted to help reduce the risk of Coronavirus transmission within my classroom by engineering a device to monitor air quality."

And so, the idea for Jan-Ole's Klimabox was born using Wi-Fi connectivity. When u-blox discovered what Jan-Ole was doing, they reached out to support him in making his Klimabox independent from local Wi-Fi gateways. Klimabox 2.0 was developed with a little help from u-blox in the form of:

- 1 Arduino MK BN 1500 cellular board, which is built with the u-blox SARA-R410M LTE Cat M1/NB1 module
- 1 u-blox Thingstream IoT SIM-Card
- 1 u-blox Thingstream SDK for MQTT protocol
- Technical support re integrating u-blox CaaS,

**Traffic light system indicates air quality**
Jan-Ole engineered and produced his Klimabox featuring what he calls a "traffic light system" to indicate the level of carbon dioxide ($CO_2$) in the air within a particular room. Green indicates that $CO_2$ levels are low and there is adequate oxygen in the room; yellow indicates rising $CO_2$ levels, and action should be taken to increase airflow and oxygen levels. A red light means urgent action should be taken to remediate air quality

levels within the room and that occupants should leave the environment until oxygen levels are adequate again.

**Classrooms shuttered across the world**
Governments, educators, parents, and students around the world have been concerned about the many hours of quality learning which have been lost due to classrooms (from Kindergarten to University level) being shuttered as a result of the pandemic. The challenge now is how can we make in-person learning settings Covid-19 safe and reduce the possibility of transmission?

**Making in person learning environments Covid safe again**
What do $CO_2$ levels have to do with making classrooms Covid-19 safe again? Scientists worldwide have documented the importance of increased air circulation in the fight against the spread of Covid-19 through tiny virus-laden aerosolized droplets which can remain in the air and travel long distances. Jan-Ole's logic was that without air circulation and oxygen replenishment within a closed interior room, Coronavirus has a much greater chance of increasing transmission and spread. The Klimabox continuously measures air quality and alerts educators if there is a problem.

**Founding his first start-up**
Jan-Ole recently founded his first start-up J-O Technik and the fourth generation Klimabox is now available. With many ideas in the pipeline, u-blox is looking forward to supporting Jan-Ole as his talent and imagination continue to unfold.

**Evaluation of our management approach to community**

We continue to be humbled by the extraordinary care and innovation both our employees and community partners around the world give to their communities.  It is our privilege to play a small part in the meaningful contribution they are making.

| Pillar/ESG Goals | Goals evaluation | Goals achieved (March 2022) |
|---|---|---|
| **Community** | | |
| **Sustainable products:** Implementation of our technology for socially responsible projects. | Supporting **two** like-minded organizations. | ✓ |
| | **Charity:Water** | |
| | **No Isolation** | |
| | **Naviblind** | |
| **STEM education:** Cooperation with organizations delivering STEM education. | Support **two** organizations inspiring youth to pursue an education in STEM. | ✓ |
| | **Schweizer Jugend Forscht** | |
| | **IngCH: Engineers Shape Our Future** | |

# Community indicators

**u-blox saved 60,480 tons of CO₂ through ADES projects**
For over a decade, we have contributed through corporate giving, product donation, and employee volunteering to the ADES reforestation initiative in Madagascar. In the last 10 years, u-blox has saved 60,480 tons of CO₂ through ADES projects and contributed to ADES's ability to provide environmental education to over 80,000 primary school children in Madagascar over the last 10 years.

**AV1 enabled 1,500 students to attend 20,000 days of school**
In 2020, in partnership with No Isolation, the AV1 enabled 1,500 students across Europe to attend 20,000 days of school they would have otherwise missed.

**100,000 of the world's most vulnerable have clean water**
u-blox and charity: water partnered in 2021 to leverage the power of IoT to bring clean drinking water to approximately 100,000 of the world's most vulnerable people.

**Empowering the blind to navigate independently**
In 2021, in partnership with NaviBlind, a new app was launched to empower blind and visually impaired people to navigate a route independently.

**u-blox employees donate their time around the world**
u-blox employees through the uGive program provide voluntary service to grassroots civil society organizations across the world.

**336 school children were fed and educated**
In 2021, as with each year since u-blox funded the construction of the Mettoh school in Ghana in 2013, 336 school children were fed and educated through u-blox funding.

**STEM organizations team up with u-blox to inspire**
In cooperation with STEM organizations, u-blox inspires the next generation of innovators and provides them with hands on opportunities to experience IoT.