SWEDEN INDIA SMART CITIES PLATFORM
India is set on the mission of building 100 Smart Cities. The program holds the pivotal promise of a sustainable living in the cities, which is challenged by rapid urbanisation. To realise the goal of a liveable urban future in India, its cities need investments both on small and large scale in smart urban systems’ technologies.

Sweden has a long history of sustainable thinking. Already during the 1960s Sweden recognised that the rapid loss of natural resources had to be confronted. Since then Sweden has worked active with addressing environmental issues, both nationally and internationally, while maintaining and even driving a desired level of economic growth.

As a result, Swedish companies in the field are innovative, state-of-the-art, efficient and life-cycle cost effective both nationally and internationally, while maintaining and even driving a desired level of economic growth.

This brochure gives an overview of the Swedish example and how Swedish companies can contribute to the building of India’s Smart Cities. We look forward to partner up with you!

WORDS FROM TEAM SWEDEN

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Ambassador of Sweden to India

Ms. Anna Liberg
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Trade Commissioner to India
Consult General, Mumbai
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Environmental awareness is deeply rooted in the Swedish society today. Sweden and Swedish companies are known for their sustainable approach – not the least when it comes to urban development. In India there are Swedish companies providing solutions within everything from urban mobility, sustainable energy systems and waste management to safety and security, information and communication systems and air purification.

During the State visit of the Indian President, Mukherjee, to Sweden in June 2015 a Memorandum of Understanding (MoU) within the field of Sustainable Urban Development was signed. The MoU aims to “promote bilateral cooperation between the Participants in the field of sustainable urban development”, and create a foundation to further develop the cooperation between the two countries in the field of urban development.

The Sweden India Smart Cities Platform specifically promotes smart urban solutions from Sweden for the Indian market. There is a great match between Swedish solutions and Indian cities’ needs, but it is also clear that one size does not fit all. Our companies’ products and services have therefore been customised for the Indian market and are scalable for small and large city solutions. Read the companies’ cases and learn how they can support India in achieving the goal of building 100 Smart Cities!
Sweden has a long history of sustainable thinking. Already during the 1960s Sweden recognised that the rapid loss of natural resources had to be confronted. Since then Sweden has worked actively with addressing environmental issues, investments both on small and large scale in smart urban safety surveillance, traffic management and e-governance.

Smart Cities. We look forward to partner up with you!
India is set on the mission of building 100 Smart Cities. The program holds the pivotal promise of a sustainable living in the cities, which is challenged by rapid urbanisation. To realise the goal of a liveable urban future in India, its cities need investments both on small and large scale in smart urban systems.

Sweden has a long history of sustainable thinking. Already during the 1960s Sweden recognised that the rapid loss of natural resources had to be confronted. Since then Sweden has worked actively with addressing environmental issues, both nationally and internationally, while maintaining and even driving a desired level of economic growth. As a result, Swedish companies in the field are innovative, state-of-the-art, efficient and life-cycle cost effective suppliers of Smart City solutions. To facilitate the transfer of our knowledge and technical expertise, Team Sweden and Swedish companies in India have established the Sweden India Smart Cities Platform. The platform functions as a vehicle for cooperation and development of Smart City solutions suitable for the Indian context.

This brochure gives an overview of the Swedish example and how Swedish companies can contribute to the building of India’s Smart Cities. We look forward to partnering with you!

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CASE: PARKING SOLUTIONS AS A PART OF THE URBAN MOBILITY STRATEGY

Cale parking solutions are vital tools for effective traffic regulation. It becomes the base for a city’s parking plan with a differentiated fee structure, which supports the implementation of a city’s urban mobility strategy.

Impact of Cale’s parking solutions for Smart Cities can be seen in Jakarta, Indonesia. The installation of 110 Cale Parking Terminals (solar driven) in the first stage in the municipality increased parking revenue sevenfold, while the congestion decreased. The public has bought into the concept as the surplus goes back to the local community and they could finance the construction of two new schools, already with the generated surplus funds. Residents have parking permits with reduced parking fees and free parking at nights. Different payment methods are credit cards, coins and mobile payments. This can be used together with a parking guiding system that directs drivers to areas with free parking space.

As a result, search traffic is reduced, contributing to a reduction in CO2 emissions and better quality of life for citizens. It moreover creates a higher efficiency for public transportation and public service vehicles.

From the start in 1955, Cale has developed into a world leading brand within the parking business, with a turnover close to half a billion SEK. Cale has subsidiaries, distributors and customers worldwide, and is introducing its successful parking concept “Parking by Cale” for reduction of CO2 emissions and regulation of traffic flow in reference to urban mobility plans.

Cale’s parking concept “Parking by Cale” is a crucial tool for Smart Cities worldwide as vital part of cities’ parking plan in order to monitor and regulating traffic flow and parking behaviour. The consequence is reduction of CO2 emissions by reducing search traffic, hence increasing efficiency in all layers of the urban society with zone based fee structure (four- and two-wheelers). Cale offers a complete system of payment methods: coins, card payments and mobile payments (smartphone app). No matter how you pay, payment is linked to your vehicle’s licence plate number including a solution for parking permit and enforcement.

Profile areas: Parking management, infrastructure for on-street and off-street parking

Industries for product offerings: Public and private owned parking in municipalities/cities, hospitals, universities, personnel parking in offices/factories, harbours, railway/train stations etc.

Turnover world: USD 60 million

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In 2014, Scania launched India’s first ethanol-run ‘Green Bus’ in Nagpur. Since the launch of Scania’s green bus, the company has been working closely with Nagpur Municipality on operating a sustainable green city fleet by adding ethanol and biogas buses. There are a number of activities in the process – including the consistent supply of vehicle ready fuel. In order to address this major challenge Scania is working with a consortium to create a biogas plant which will produce bio-methane by treating sewage water. Scania is also working with ethanol suppliers to upgrade fuel to meet mobility solutions. Scania’s goal has been to address city challenges of mobility and emissions and demonstrate the substantial benefits of scaling and operationalising the concept of “local waste to local fuel for local transport” in Nagpur. If successful, this pilot project, presents an opportunity for other cities to move their fossil fuel based transport to green fuels like ethanol and biogas with Scania Buses and logistic solutions.

Scania is a leading manufacturer of premium heavy trucks, buses, coaches, and engines. Scania has invested Rs 300 Crore in two manufacturing facilities in India and envisions India as also an export hub for Asia Pacific. Scania has been a global pioneer in addressing the challenge of de-carbonizing public transport through renewable fuels. Scania’s sustainable products and transport solutions are now manufactured and available in India.

Scania is committed to integrate sustainability in the transport sector. Scania believes that a sustainable public transport will be the backbone of a Smart City.

- In 2014, Scania launched India’s first ethanol-run ‘Green Bus’ in Nagpur.
- In the next phase Scania has kick-started a project to deliver and operate buses run on ethanol and biogas in the city of Nagpur.
- Scania has initiated a pilot for the construction of a biogas plant together with its partners. The biogas will be generated from treated sewage water.

Through these initiatives Scania presents a leap frog from fossil fuel based transport to cleaner renewable fuels addressing pollution issues while demonstrating the substantial benefits of scaling and operationalizing the concept of “local waste to local fuel for local transport”.

Profile areas: Public transport, logistics and distribution, construction and haulage, engines for power generation, network and services

Industries for product offerings: Automotive, construction, mining, alternative fuels, sustainable and smart transport

Turnover world: SEK 95 billion

Turnover India: INR 5.8 billion

Number of employees worlds: 45,073

Number of employees India: 1002

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CASE: HYBRID SOLUTION SAVES FUEL AND REDUCES EMISSIONS

Volvo Group in India including its JV has 12,000 employees, seven plants and is a global hub for medium-duty engines. The Group is aligned with India’s strategic priorities of urbanization and infrastructure development, whilst making transportation sustainable. Solutions from the Group cover a wide canvas:

- Public transport. Volvo City Buses offer the richest experience in promoting the public transport agenda with operations across 34 Indian cities - motivating citizens to choose public transport. This year, Volvo Hybrid City buses commenced operations in India with the potential to save 30-35% fuel and 50% reduction in hazardous emissions.

- Infrastructure development, waste management. Volvo Construction Equipment and Volvo Group Trucks are a potential part of a city’s efforts towards quality infrastructure development, road construction, emergency services or distribution activities for waste or essential material. These products deliver more work per day – affecting profound savings in fuel, emissions and transport economy. Volvo Group’s RASTA Institute also offers consultancy and post-graduate courses in the area of Road Building technology.

- Intelligent power backup. Volvo Penta Engines are highly regarded for their environment friendly, compact and fuel-efficient power backup. Typical applications are off-road and industrial or business establishments.

- Volvo Group Telematics with its global installation of over 325,000 connected trucks, 78,000 construction machines and 7,000 buses is a potential talking partner between the transport arena and the city’s back-end systems.

Profile areas:
- Transport, public transport systems, construction equipment, telematics, engines, road building technology
- Industries for product offerings: City mobility, transport corporations, infrastructure, road building, waste management

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*Volvo Group including the JV Partner VE Commercial Vehicles
The world’s first 4G network was brought online in Stockholm in 2009.

Sweden is the world’s third most connected country 2015 according to the Global Connectivity Index.

By 2020, it is expected that every transaction in Sweden could be digitized. Even the Swedish churches’ collection plates have gone digital.

Stockholm is the world’s second most successful producer of unicorn startups (startups valued at more than a billion dollars), only second to Silicon Valley.

In per-capita terms Sweden is the second most capital intense tech-hub in the world, boasting 6.3 billion-dollar companies per 1 million people.
A growing security concern was recognised by the Nanded Waghala City Municipal Corporation (NWCMC) and Nanded Police. They looked for an intelligent video surveillance solution to address concerns regarding: early warnings for preventing disasters, efficient monitoring for better governance, better traffic management, and crime prevention and control. In an attempt to tackle these concerns a total of 104 high resolution, night vision, fixed and PTZ Axis cameras were installed at all strategic locations spread across the city.

The focus was on monitoring all critical areas of the city, including major entry and exit points, busy junctions and tourists’ attraction spots. The idea was to convert the city surveillance project into a safe city project to help the local authorities improve the overall operational efficiency and reduce manual intervention.

As a result Axis surveillance solution has helped the law enforcement authorities to assist the on-field police in crime tracking, directly from The Superintendent of Police headquarters and has enabled better governance and civic administration. Moreover, the solution helps to monitor strategic places such as the Sachkhand Gurudwara, traffic signals, busy streets and other places of religious importance which are potential criminal/terrorist targets.

Case: Smart Video Solution Makes City Safe

Axis has seen many successful network video solution implementations in government projects around the world. With long-standing experience and proven track record in network video technology, be rest assured Axis will help to meet the needs of public safety and security.

With Axis’ solutions for IP surveillance, you can follow your entire city in the sharpest real-time HDTV; be it any time of the day, any weather condition or attempts at tampering. In addition, it can help in:

• Locating and identifying intruders
• Recording highly detailed video scenes with HDTV image quality for future analysis
• Detecting vehicles, people and incidents even in complete darkness

With Axis, discover new possibilities in network video and stay one step ahead in creating a safer, smarter and secure environment, infrastructure and transportation hub for both the citizens and the country.

Founded in 1984, Axis has more than 2100 employees in more than 50 countries globally and offers intelligent security solutions that enable a smarter, safer world. As the market leader in network video, Axis is driving the industry by continually launching innovative network products based on an open platform - delivering high value to customers through a global partner network.

Profile areas: IP CCTV surveillance
Industries for product offerings: Banking and finance, city surveillance, critical infrastructure, government, education, healthcare, industrial, retail, transport
Turnover world: USD 750 million
Turnover India: N/A
Number of employees world: 2000+
Number of employees India: 20

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CASE: SMART VIDEO SOLUTION MAKES CITY SAFE
Ericsson is driving the force behind the Networked Society — a world leader in communications technology and services. Our long-term relationships with every major telecom operator in the world allow people, business and society to fulfill their potential and create a more sustainable future. Our services, software and infrastructure — especially in mobility, broadband and the cloud — are enabling the telecom industry and other sectors to do better business, increase efficiency, improve the user experience and capture new opportunities. With approximately 115,000 professionals and customers in 180 countries, we combine global scale with technology and services leadership. We support networks that connect more than 2.5 billion subscribers. Forty percent of the world’s mobile traffic is carried over Ericsson networks. And our investments in research and development ensure that our solutions — and our customers — stay in front.

Founded in 1876, Ericsson has its headquarters in Stockholm, Sweden. Net sales in 2015 were SEK 246.9 billion (USD 29.4 billion). Ericsson is listed on NASDAQ OMX stock exchange in Stockholm and the NASDAQ in New York.

For Ericsson, everything that can benefit from being connected will be. Today’s sustainable Smart Cities’ solutions includes everything from smart metering through smart grids to connected buses and bus stops, e-health, smart work, mobile money, network and system integration and smart light solutions.

Profile areas: ICT
Industries for product offerings: Smart cities, security, transport, utility
Turnover world: SEK 246.9 billion
Turnover India: SEK 13.4 billion
Number of employees world: 116,281
Number of employees India: 22,000
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Stockholm Royal Seaport is a high-profile mixed-use project within Stockholm, Sweden, intended as an international model for sustainable city development. Located in the north eastern part of the city, Stockholm Royal Seaport is due to include 12,000 homes and 30,000 workspaces, with a wide diversity of architecture and lifestyles.

By longterm planning, with a far-reaching vision, Stockholm Royal Seaport aims to limit climate impact, be free from fossil fuels by 2030 and be adaptable to present and future climate change challenges. This vision supported by overarching goals relating to “energy use, environmentally efficient transport, adaptation to changed climate, cycles and cyclical models at system level and lifestyle issues”.

At the heart of the development is a collaborative partnership between the City of Stockholm, private enterprises and the research community, with Ericsson as one of the lead ICT partner and advisor. Major collaborative projects that are either planned or in development include a smart urban grid, a vacuum-powered smart waste collection system and a shared ICT infrastructure to provide an efficient communication system for sustainable city development.
Icomera is one of Sweden’s fastest growing technology companies. Positioned right in the middle of the global trends of connectivity and mobility, our routers have been delivering onboard Internet for public transport vehicles since 2001, connecting millions of Wi-Fi users and tens of thousands of vehicles to the Internet every week, in more than 40 countries.

Icomera believes in a better future powered by a Connected Journey—a revolution in transport powered by a new generation of digital infrastructure. Icomera is helping power the connected journey with its high-performance wireless Internet connectivity and a range of services that run seamlessly through this connectivity.

Our vision is a future society that is safer, more efficient and more environmentally friendly. We are striving to realise this vision in everything we do. Our services deliver a better public transport experience for passengers and we believe that making public transport more attractive is critical to improving the economic and social quality of life for the population.

Profile areas: Internet connectivity, communication, Wi-Fi, passenger transport services (entertainment, operational efficiency, environmental, safety, security)
Industries for product offerings: Primarily public transport

Turnover world: USD 28 million
Turnover India: N/A
Number of employees world: 140
Number of employees India: N/A

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Many airlines are resorting to converting paper documents for pilots into electronic documents. This allows airlines to lower energy costs as weight of this documents can be substantial.

Icomera’s solution, a mobile router installed on the ramps, ensures that Internet connectivity is available anywhere on the tarmac. As successfully demonstrated in trials with Indigo Airlines, electronic documents can be updated on the tarmac, resulting in improved operational efficiency. Additional functionality can be achieved by transferring passengers from one plane to other from the tarmac itself.

The solution is built around Icomera’s rugged, industrial-grade M340 router which provides the ramps with Wi-Fi access utilising the HSPA, HSPA+ and 4G networks. The solution is supported by cloud-based management tools for remote system monitoring and updates.

CASE: WI-FI ACCESS LOWERS ENERGY COST
Every month 993 tonnes of food waste is gathered by the City of Stockholm. The waste is then turned into 115,000m³ of gas, which buses and taxis use as fuel.

Renewable sources account for 52% of the Swedish energy production, out of which approximately 95% comes from hydropower.

The average Swede releases 4.25 tonnes of CO₂ per year into the atmosphere, compared with the EU average of 6.91 tonnes and the US average of 16.15 tonnes.

Bioenergy represents 22% of Sweden’s total energy supply, most of which is used in industrial processes and for district heating.

In 1970, oil accounted for more than 75% of Sweden’s total energy supply. Today, the figure is around 20%.
ABB is a global leader in power and automation technologies. Our innovative solutions improve the efficiency, productivity and quality of our customers’ operations while minimizing environmental impact.

ABB’s global operations are organized into four divisions:

- **Electrification Products**: ABB offers a full range of low- and medium-voltage solutions to connect, protect, control and measure a wide range of electrical systems for all major industries, including the residential sector.
- **Discrete Automation and Motion**: This division provides products, solutions and related services that increase industrial productivity and energy efficiency.
- **Process Automation**: The main focus of this ABB business is to provide customers with products and solutions for instrumentation, automation and optimization of industrial processes.
- **Power Grids**: ABB is the world’s leading supplier of power and automation products, systems and service solutions across the power value chain of generation, transmission and distribution.

ABB has been present in India for over a century. Over the last six decades, ABB has established 12 manufacturing centers across the country and its largest corporate research center in Bangalore.

Profile areas:
- Power and automation solutions for energy management, water and wastewater management, urban mobility, buildings, waste to energy and more
- Industries for product offerings: Power transmission and distribution, power generation, water and wastewater, automotive, data centers

Turnover world: USD 35 billion
Turnover India: USD 1.3 billion
Number of employees world: 135,000
Number of employees India: 6000+

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Fortum’s vision is to be the forerunner in clean energy. We provide our customers with electricity, cooling and heating as well as other energy solutions that improve present and future life.

- Fortum uses its expertise to help cities solve their energy-related challenges in a sustainable way. We provide solutions for cooling and heating, waste-to-energy and clean combustion, among others. We are also looking for growth in solar in selected new locations.
- Fortum Charge & Drive offers an advanced, cloud-based operator system for electric vehicle (EV) charging service providers as well as infrastructure investors.
- The Charge & Drive system is a comprehensive business system for operating any charging stations. It builds on our experiences from Norway, Sweden and Finland.
- In these markets Charge & Drive also offers charging services for electric vehicles’ users and turnkey charging solutions for infrastructure investors. Organizations like BMW, City of Stockholm, McDonald’s, Nissan, Renault, and Volkswagen have trusted in us to operate services for them.
- Fortum’s expert center offers its expertise, services and products worldwide. Our 300 professionals provide a wide range of services for different types of power plants. The offerings range from long-term, full-scope operation and maintenance (O&M) solutions to highly specialized expert products and services for power plants, plants owners and developers.

Profile areas:
- Solar solutions, district heating and cooling,
- integrated electricity solutions, waste-to-energy, waste treatment,
- EV smart charging solutions

Industries for product offerings:
- Energy, industrial, retail, government, transport

Turnover world: EUR 3.5 billion
Turnover India: N/A
Number of employees world: 8000
Number of employees India: 35

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Fortum provides sustainable solutions for society and delivers excellent value to its shareholders. Thus, the company believes in responsible energy production focusing on low emissions, high resource efficiency and security of supply. Fortum opened its office in India in September 2012 to assess growth opportunities on the Indian energy market.

In June 2013 Fortum acquired a 5 MW solar power plant in the state of Rajasthan, north western India. It further strengthened its solar portfolio in December 2014 when its 10 MW solar PV plant was connected to the grid in Madhya Pradesh. The plant was formally inaugurated on 20 January 2015 as the first project to be commissioned under the Jawaharlal Nehru National Solar Mission (JNNSM) Phase II Batch I.

Moreover, Fortum has endowed the primary and secondary schools in Kapeli with basic electricity infrastructure, powered by solar energy. The initiative is expected to benefit about 250 students from the village, studying in these schools. Moreover, the company has empowered the only clinic in the village with solar-powered infrastructure to ensure 24X7 uninterrupted basic medical aid facilities.
The concept “Green flights” is developed at Stockholm Arlanda airport. A green approach contributes to less noise, reduction in fuel consumption and atmospheric emissions.

Sweden was the first country in the world to deploy remotely operated air traffic management in 2015.

The Automatic Identification System (AIS), which laid the foundation for the GPS was invented by the Swedish inventor Håkan Lans.

Stockholm was the second city in the world to introduce congestion charges by using cameras and roadside technology in combination with an operational system.

Stockholm’s congestion charges have resulted in a 4-5% increase in use of public transport, 22% decrease in traffic, up to 50% reduced waiting time to enter the city and a carbon emission drop of 10-15%. 

DID YOU KNOW THAT…
FLIR Systems – The World’s Sixth Sense, designs, develops, manufactures, markets and distributes technologies that enhance perception and awareness. FLIR provides innovative sensing solutions into daily life through thermal imaging and other test equipment. FLIR is a global company with approximately 3000 employees and its 2015 revenue was USD 1.6 Billion (approximately INR 11 200 Crores). FLIR can help Smart Cities with below innovative and cost effective solutions:

- Smart electrical distribution network of the city: Effective solutions for reducing failure rates, improve efficiency through predictive maintenance and continuous temperature monitoring.
- Smart concrete solutions: Save time, money and ensure quality of construction.
- Smart safety solutions for CNG storage stations for transport vehicles.
- Smart building solutions: For short circuit fire prevention, energy efficiency and air quality.
- Smart fire fighting solutions: A tool that helps fire fighters quickly visualize the plan of attack, locate hot spots and save lives.

Profile areas:
- Smart electrical distribution, predictive maintenance, temperature monitoring, safety, fire fighting and prevention, energy efficiency, air quality
- Industries for product offerings: Power/utilities, building, real estate and facility management, fire department, transport industries, electricall/mechanical maintenance etc.

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Every day millions of commuters use the Delhi Metro Rail Corporation (DMRC) and it ensures that its commuters arrive timely on their destination. In order to keep the metro network running at all times, DMRC is using FLIR E50 - thermal imaging camera. The large and intensely used network serving Delhi, Gurgaon, Noida and Ghaziabad consist of seven lines with a total length of 189,63 kilometres, with 142 stations of which 35 are underground.

To prevent the network to be worn due to the intense use, it has to be maintained at all times. By using FLIR E50 DMRC’s maintenance crew is able to detect defective parts in the railway in an early stage so they can plan repairs and prevent costly failures and downtime. All the electronic equipment and components heat up before they break down. By using the FLIR E50 these potential problems become clearly visible in a thermal image. FLIR E50 was able to record IR Radiation emitted by section insulators and provide thermal images with each pixel corresponding to a non-contact temperature measurement.

Careful analysis of the thermal data has allowed the DMRC to take the appropriate action. This thermal information has also helped DMRC to check the redundancy of its system during different weather and loading conditions for ensuring better services to its commuters.

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Careful analysis of the thermal data has allowed the DMRC to take the appropriate action. This thermal information has also helped DMRC to check the redundancy of its system during different weather and loading conditions for ensuring better services to its commuters.
For seventy five years Saab has been developing technology aimed at creating a safer society. Today, this experience is utilized to create a wide range of affordable, net-centric security solutions that can radically improve capabilities within areas such as Critical Infrastructure Protection, Emergency Response, and Event Protection. By combining robust and reliable integration platforms with command and control systems, we empower our customers with a higher level of situational awareness, enabling rapid responses to incidents as well as improved efficiency and security.

Saab also offers a wide range of intelligent transport systems – traffic management, traffic information, urban security and public transport systems – designed to improve security and efficiency without compromising the ease of use that society depends upon daily. For example, Saab is redefining the future of Air Traffic Management. Saab’s Digital Tower Solutions represent the next revolution in air traffic control, enabling air traffic services to be provided more efficiently for any airport, from any remote location.

Profile areas: Security, communication, command and control, traffic management, cyber security
Industries for product offerings: Airports, infrastructure, ports, communication, security, defense
Turnover world: USD 3.3 billion
Turnover India: N/A
Number of employees world: 14,500
Number of employees India: 25

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CASE: SMART CONTROL SYSTEM SECURES 44 MILLION PASSENGERS PER YEAR

Rapidly increasing air traffic and seasonal fog conditions unique to New Delhi can create flight delays and cancellations at India’s busiest airport, Indira Gandhi International Airport (IGI). To safely accommodate almost 44 million passengers a year air traffic controllers require a reliable and accurate picture of the airport surface traffic in extreme weather conditions. Saab’s A-SMGCS (Advanced Surface Movement Guidance and Control System) improves operational efficiency and provides accurate surveillance in all weather conditions. Air traffic controllers are provided with vital situational awareness of runways and taxiways thereby making our airports much safer. It enhances their ability to see and manage traffic in all weather conditions by tracking targets in real time and identifying them by type, altitude and velocity. This surveillance data is presented to the controller enabling safety, efficiency and capacity improvements on the airport. In addition to the visual display, Saab A-SMGCS also incorporates advanced conflict detection and alerting functionality visually and audibly alerting air traffic control to possible conflicts and incursions. Our systems are in operation at nine of the busiest airports in India, including New Delhi, Mumbai and Chennai.
Stockholm has 100% better air quality today compared with 1965, due to joint environmental regulations, public compliance and innovative technologies.

Sweden imports 800 000 tonnes of waste every year from other countries for energy conversion.

Today 99.7% of Sweden’s household waste is recycled, which means that less than 1% of the waste goes to landfill. In 1975 only 38% of household waste was recycled.

Today, 32 waste incineration plants in Sweden produce heat for 810 000 households (18.7% of all households in Sweden) and electricity for 250 000 private facilities.

Sweden’s first waste incineration plant was set up in Stockholm already in 1904.
Camfil is a world leader in air filters and clean air solutions. Camfil caters to customers through business units - filters for comfort applications, air pollution control, airborne molecular contamination and indoor air quality. With over 50 years of experience in air filtration products and solutions, Camfil delivers value to customers while contributing clean air for health and well-being - an essential part of Smart Living and Smart Cities.

Comfort Applications: Energy efficient Eurovent certified filters for AHU’s for commercial buildings, offices, hospitals, educational institutions, data centers, museums, Embassies and airports. Medanta, Gurgaon, British School, Swedish Embassy in New Delhi are some examples.

Indoor Air Quality: 13 of the most polluted 20 cities in the world are in India. Camfil can help in reducing impacts of air pollution with its range of air purifiers and cleaners for home, commercial and industrial applications. Retail stores, data centers, offices, hotels, hospitals, airports are some applications. We also offer customised solutions. Cognizant Technologies in Kolkata is an example of how we handle harmful gaseous pollutants apart from PM 2.5.

Dust Collectors: Camfil offers a range of dust collectors for welding fumes, grinding dust, laser cutting fumes, chemical processing, pharmaceutical manufacturing, powder painting and other industrial applications protecting people. Vishay Components in Pune, GSK, Nashik, Pfizer in Goa are satisfied customers.

Profile areas: Energy efficient air filters, air purifiers and air industries for product offerings: Schools, offices, residences, retail stores, warehouses, hospitals, manufacturing shop floors, food and beverage plants, auditoriums etc.

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CASE: AIR FILTERS PROTECTS HEALTH IN POLLUTED CITIES

Camfil India has responded to Delhi’s pollution menace by offering Camfil’s range of air purifiers to concerned and affected groups.

City M air purifier is being used to protect the health of children of employees in a corporate day care center of a major automotive component company in Delhi. Seeking a solution for higher indoor air quality for a healthier indoor environment, the company requested Camfil India to verify the performance of the City M by conducting a test in the children’s room. Prior to the test, the PM2.5 concentration in the room was measured at 300 micrograms/m². City M was then placed in the 43 m² room, where the air purifier was allowed to run for six hours. The concentration was then measured and the particle count indicated that the PM2.5 level fell significantly to 100 micrograms/m², or 67%. City M is now being considered for use throughout the premises.

A larger Swedish Multinational with an office area of 25,000 square feet wanted clean air for their employees and did not want a centralised system. The solution was Camfil’s larger air cleaners suited to handle 10,000 square feet. Two large units and ten smaller units saw the PM2.5 reduce from 150 micrograms per m² to less than 20 micrograms per m². The products also helped reduce gases and odour. Example of other customers of Camfil Air Solutions are the Swedish Embassy, Australian Embassy and British School in New Delhi.
Envac is a Swedish multinational corporation operating in over 40 countries. Envac invented the automated waste collection system (AWCS) in the 1960s and the first installation was handed over in 1961 to the City of Stockholm. Envac’s underground network systems transport the municipal and commercial waste. The collection and transportation of waste is fully automated, safe and environmentally advantageous. The system leads to drastic reduction of road transportation of waste, improved hygiene and enhanced occupational health and safety standards. The system supports source separation and is based on vacuum technology and installed in all types of developments. The system reduces the need for manual labour and can be integrated to processing technologies.

Envac has installed the world’s first integrated automated waste and recyclable segregation plant in GIFT City, an 886 acres city in Gandhinagar, India. GIFT City will have 300 tons of waste from 112 high rises and other areas of the city. GIFT City gets benefitted with the AWCS system and when smart cities are planned the system could easily give a real smart solution for waste management. The average pay back period of the system is 7 to 10 years.

**Profile areas:** Waste management, environmental/green technology, infrastructure

**Industries for product offerings:** Apartments, commercial areas, townships, smart cities, airports, flight catering, hospitals

**Turnover world:** USD 6.8 billion*
**Turnover India:** INR 200 million
**Number of employees world:** 600
**Number of employees India:** 10

*Envac’s parent company Stena Sphere

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Envac, the global pioneer in underground automated waste collection, has installed the world’s first integrated automated waste and recyclable segregation plant in GIFT City, India’s first smart city. The first phase of Envac collection and segregation plant has been in operation since April 1, 2015. On completion in 2028, Envac will handle the waste of the entire 950 acres of GIFT City, which is expected to be over 300 tonnes per day generated from GIFT City’s 25,000 apartments, 100,000 residents and a working population of over 500,000. The site’s retail zone will also attract between 50,000 visitors each week.

GIFT City will comprise 112 towers of up to 60 floors, residential and commercial zones, hospitals, schools and a world-class trade centre. Each building will have two chutes, which will feed into one of seven on-site collection stations, covering organic waste and mixed recyclables. Envac is also responsible for sorting the mixed recyclables and talks are currently underway to include an onsite waste-to-energy plant. The vision of GIFT City matches the vision of the Prime Minister of India under the Clean India Mission.

**CASE: WASTE MANAGEMENT SYSTEM IMPROVES HYGIENE, HEALTH AND SAFETY**
Business Sweden's purpose is to help every Swedish company to reach its full international potential, and help companies abroad to reach their potential by investing in Sweden. We offer our customers strategic advice and hands-on support.

Business Sweden is owned by the Swedish Government and the industry, a partnership that provides access to contacts and networks at all levels.

Business Sweden was established in India in 1996. We are now a team of 30 business consultants, with offices located in New Delhi and Bangalore. Business Sweden has for the past twenty years played an active role in enhancing trade and investments between Sweden and India, which is especially strong in areas such as smart cities, smart manufacturing, telecom, power, medtech, but also with an increased focus on consumer markets. Business Sweden acts as a dedicated business partner for Swedish companies in India by assessing the market, building strategies for market entry, growth and development as well as supporting in establishing business entities and teams.

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