# LIFE IN Estonia

SUMMER | 2012

## Electronics Industry Bursting With Optimism

## SPECIAL! Estonia Goes Electro-mobile

## Flavours Of Estonia

## Every Country Needs A Few Friends

## Katrin Kuldma: When Fashion Is Your Passion

## Tallinn's Newest Tourist Hot Spots

land & people | state & society | economy & business | design & innovation | culture & entertainment | tourism

ISSN 1406-7331

Estonia.eu
Positively surprising

LIFE IN Estonia

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## Dear Friend of Estonia,

as you probably know already, the past two decades in our country have been rather successful. We have been persistent and we have worked hard. We have achieved our main goals and become members of the European Union, NATO, OECD and finally, starting from January 1st 2011, the Euro-zone.

Fiscal responsibility, flexibility and a willingness to take tough decisions and act have become Estonia's international trademarks, helping us to reshape and rebound after the initial shock of the global financial crisis. Our achievements have even made us quite famous, as some scholars see us as an example to follow and others belittle our successes and choices.

Let me be clear: crisis causes pain and suffering everywhere and no one is pleased to be "the lucky loser". Estonia's setbacks can be measured in lost jobs, diminished salaries and lost opportunities. However, it is crucial not to lose hope in a better future and to work hard, so that better future would begin sooner. That is our credo, and it is up to others, whether to learn something from it.

Estonia could not have realized its seemingly impossible goals and be where it is now, without the support of our good friends. This is why Estonia is genuinely grateful to all those whose support and sage advice, trustworthiness, investment, good will or personal relations have helped us to join the ranks of the most developed nations in less than twenty years after emerging from the miasma of Soviet occupation.

There are lots of things to see in Estonia, from the medieval old Tallinn to the remotest village in Ruhnu island or Setomaa. However, what nearly all Estonians are most proud of is the use of information technology in the public as well as the private sector. This is the engine of Estonia's rapid development. We are convinced that a citizen-centered, secure and transparent public sector ICT approach will provide the foundation of good governance in the 21st century.

Estonians are e-believers. We are proud to be pioneers and leaders in e-government. We have developed and implemented innovative solutions that improve the lives of millions, and intend to develop more.

Estonia's culture is a unique mix, influenced by many other cultures and open to novel ideas and unique approaches. Estonia has numerous brilliant young musicians and other artists, who can be seen and heard around the world. There is much to discover in Estonia. We can boast of a host of unique festivals from film to music to theatre to the traditional song and dance festivals. You will always find something interesting here to participate in.

I hope that all who pick up this magazine will want to be good friends of Estonia. Our strength and continued well-being also rests with Estonia's Friends. If you are looking for new things and beautiful places in the world then you will find all of it right here, in Estonia. We welcome you, dear friends!

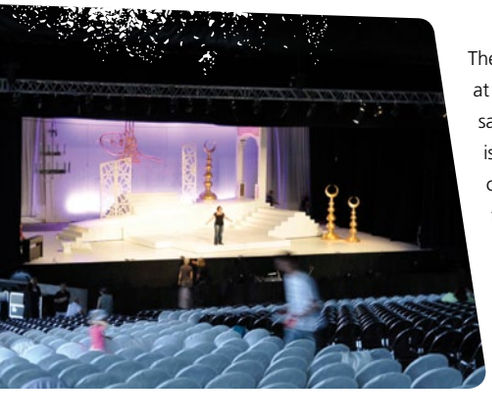
photo: Hindrek Maasik

**Toomas Hendrik Ilves**
**President of Estonia**

# SUMMER_2012

## SAAREMAA OPERA DAYS

**16–22 July 2012**



The first opera festival in Estonia was held at the Medieval Episcopal Castle of Kuressaare, the capital of Estonia's largest island of Saaremaa, in 1999. The Episcopal Castle is one of the best-known tourist sites in western Estonia, and the acoustics of the castle's yard are ideal for romantic operas. The opera tent in the castle yard holds about 2,000 spectators. The Saaremaa Opera Days have hosted troupes of the St Petersburg Maria Theatre, the Latvian National Opera, the Lithuanian Opera and Ballet Theatre, and the Ankara Opera and Ballet Theatre, as well as directors and soloists from famous opera houses of Vienna, Moscow, the Nordic countries, Germany, Brazil and others. The highlight of last year's festival was a concert by José Cura. The Festival collaborates with the Finnish National Opera and the Estonian opera theatres of Tallinn and Tartu. Since 2008 the festival has been organized by Eesti Kontsert.


## Music is the Voice of Love
## HORTUS MUSICUS 40

**19 September** Jõhvi Concert Hall
**20 September** Vanemuise Concert Hall
**21 September** Pärnu Concert Hall
**22 September** Estonia Concert Hall
Artistic Director ANDRES MUSTONEN
Guest soloists

This year is special for Hortus Musicus, since this fall the ensemble celebrates its 40th anniversary. Forty years is a respectable age for a music group but over the years, our fantasy, joy and curiosity have only increased. We experiment more than ever, we shift borders and cross them. We invite you to become part of it. I wish you beautiful concert experiences!
Andres Mustonen


HORTUS MUSICUS

## ROOFTOP CINEMA
## opened its third season

**Rooftop Cinema, Katusekino, in the heart of Tallinn on the roof of the Viru Shopping Centre, is the first open-air cinema in Estonia, offering a unique opportunity to watch a selection of quality films, from classics, forbidden movies and documentaries, to scandalous cinema, freak and cult films, to new and fresh movies. June begins with a Bernardo Bertolucci retrospective and July offers a tribute to the scandalous American film-maker Stanley Kubrick.**

Besides food for the soul and mind, one can also have a picnic on the "lawn" of the Sun Terrace, with refreshing cold beer and reasonably priced snacks, while getting "a million-dollar view" over the city and to the sea, with Tallinn skyscrapers in the background.

The Rooftop Cinema Café is a new and seasonal outdoor terrace and dining place with its own ambience. Situated near the clouds and in the heart of the city, it provides visitors with enchanting flavours and aromas. The cuisine is based on seasonal raw materials and offers the best practices of modern Nordic cooking: clean, fresh, and simple flavours. The food is modern, high quality and unique. Simple cooking methods and materials create character and quality and, most importantly, all these clean flavours await you in a cosy oasis that towers over the capital.

If it's raining, around 150 people can watch films under the roofs and on the terraces without getting wet. Altogether there are seats for 400 people.


ANDRIS NELSONS

## City of Birmingham Symphony Orchestra

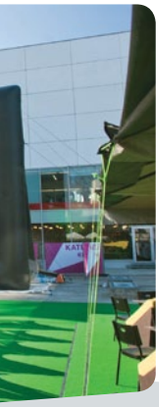
16 October 2012 at 7 p.m.
at Estonia Concert Hall

Soloist CHRISTIAN TETZLAFF (violin)
Conductor ANDRIS NELSONS
Programme: Violin Concert and Symphony No 4 by Johannes Brahms

Sir Edward Elgar conducted the inaugural concert of the City of Birmingham Orchestra in November 1920. During the following years, the Orchestra's reputation grew steadily but it was the 18-year leadership of Sir Simon Rattle that truly lifted the CBSO into the ranks of the world's great orchestras. In 2008, the charismatic young Latvian conductor Andris Nelsons became the music director and chief conductor of the CBSO. In recent seasons, the Orchestra has given performances in many of the most prestigious European concert halls and festivals. Plans for 2012 include concerts in the Théâtre des Champs-Élysées in Paris, at the Musikverein in Vienna, at Estonia Concert Hall in Tallinn etc.
The CBSO plays the broadest possible range of music to the widest possible audience. This includes the symphonic and contemporary classical repertoire, but also lighter music - from Johann Strauss to James Bond. The CBSO really does offer something for every kind of music-lover.

## The new and colourful Jazzkaar season

Jazzkaar kicks off its autumn season in the rooftop cinema in the open air, where on Saturday, 25 August, the cello quartet C-Jam will perform. The repertoire of the Estonian National Symphony Orchestra cellists ranges from classics to pop to jazz to rock - the exciting arrangements and amazing energy will vibrate in the open air in the heart of the city!



The pearl of the autumn season is the guitar virtuoso and amazing singer Badi Assad from Brazil, who has recorded and played with such top guitarists and musicians as Larry Coryell, John Abercrombie and Pat Metheny. This wonder woman also imitates various instruments, thus adding fresh colour to her vocals. Don't miss the concert by the highly respected François Corneloup Trio, which plays modern French jazz. This time he is accompanied by the well-known female bass player Helen Labarriere and one of the most highly esteemed drummers, Simon Goubert.

Tickets for Sügisjazz are on sale at Piletilevi kiosks and on the Internet at **www.piletilevi.ee**

### Rooftop Cinema on the roof of the Viru Centre

Open from 15 May to 2 September / Sun Terrace and café are open from Monday to Friday from 12 pm to 2 am and at weekends from 5 pm to 2 am

**TICKETS:** Regular ticket - 5 EUR
Seat in a sheltered terrace with a patio heater -7 EUR
Pre-sale tickets **www.piletilevi.ee** or **www.rooftopcinema.eu.**
**KON THE SPOT:** half of the tickets will always go on sale at the Rooftop Cinema before the screening.

For further information see: **www.katusekino.ee**

EESTI KUNSTIMUUSEUM

## KUMU

European Museum of the Year Award 2008

### A Romantic View. 19th Century Dutch and Belgian Paintings from the Rademakers Collection

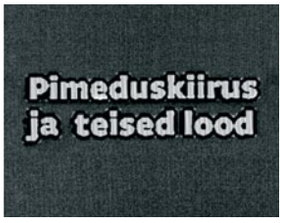
**UNTIL 26.08.2012**

The collection was compiled by Jef Rademakers, a former television producer, with superb intuition, offering all genres and shades of the diverse romanticism of Netherlandish art.

CH. KANNEMANS. SHIPWRECK. 1849. JEF RADEMAKERS COLLECTION. PHOTO: BRUNO VANDERMEULEN

### Speed of Darkness and Other Stories

**UNTIL 30.09.2012**




The concept of the exhibition is based on the conflict between fantasy and rationality, and the effective power of expression that light possesses in highlighting significant things. Artists from Estonia, Finland and Latvia are participating in the exhibition.

**KUMU ART MUSEUM**
Weizenbergi 34 / Valge 1, Tallinn
Phone +372 602 6000, www.kumu.ee

**Open: May–Sept Tue, Thu–Sun 11am–6pm, Wed 11am–8pm**
**Oct–Apr Wed 11am–8pm, Thu–Sun 11am–6pm**

## Harvard-educated Ardo Hansson elected the next governor of Eesti Pank

The Supervisory Board of the Estonian central bank, Eesti Pank, elected Ardo Hansson, a Harvard-educated economist, as a successor to the current governor Andres Lipstok whose seven-year term ended on 6 June 2012.

Ardo Hansson, 53, previously worked for the World Bank, serving as the Chief of the World Bank's Economics Unit in China beginning in 2008. In addition to China, Hansson has also worked in various eastern European and Balkan countries. Hansson served as a member of the Supervisory Board of Eesti Pank in 1993-1998, as an economics adviser to the Estonian Prime Minister in 1992-1995 and in 1997, and as an adviser to the Minister of Foreign Affairs in 1991-1992. Hansson was also a member of the Estonian Monetary Reform Committee. Having obtained a PhD degree in economics from Harvard University, Hansson has previously worked for severable reputable universities and published numerous articles on economic policy.

"The Governor of Eesti Pank is now more powerful than ever. As a member of the Governing Council of the European Central Bank, Ardo will participate in decisions affecting inflation in the entire euro area, which has a population of more than 330 million people. Indeed, my last working day was spent in Frankfurt, passing the euro area interest decision together with other governors of central banks. I am convinced that Ardo's education and professional experience have prepared him well for this demanding work," the leaving governor Andres Lipstok said.

"I will pass the torch to Ardo with complete confidence. The Estonian banking sector stands strong; there is no need to use taxpayer money to save banks. Our people and companies have savings, and our inter-bank payments are quicker than anywhere else in Europe. Eesti Pank is quite capable of performing its tasks. I would like to see it keep on its course in the future," Lipstok said.

The governor is appointed for a term of seven years, and cannot serve more than one consecutive term.

## Matthew Bryza heads the International Centre for Defence Studies

On 1 March 2012, a veteran career diplomat and one of the key architects of NATO enlargement, Matthew J. Bryza, became Director of the International Centre for Defence Studies (ICDS).

As the leader of ICDS, Bryza will oversee the Centre's general management and develop the coordination and performance of academic research at the Centre.
In January, Bryza left the US Foreign Service, where his last posting was as US Ambassador to Azerbaijan.
Previously, Bryza has served at the US State Department as Deputy Assistant Secretary of State for European and Eurasian Affairs, responsible for the development and implementation of US policy in the south Caucasus, Turkey, Greece and Cyprus and at the National Security Council as Director for European and Eurasian Affairs, tasked with the development and coordination of US foreign policy in the south Caucasus, central Asia, Turkey, Greece and Cyprus, and Eurasian energy security, acting in close cooperation with National Security Advisor Condoleezza Rice.
Bryza started his diplomatic career in 1989 at the US Consulate in Poland, Poznan, where he led the consulate's contacts with the Solidarity movement. He has also worked at US Embassies in Warsaw and in Moscow.

Lauri Mälksoo, Chairman of the Supervisory Board of ICDS, affirms that Bryza's appointment as the new head will definitely increase the Centre's international clout and visibility.
"ICDS is an international think tank, which is reason enough for us to think big and to be ambitious both in our region, and on the global stage," said Mälksoo. "Leading think tanks like ICDS need to constantly develop new high-level contacts with international policy-makers and analysts. The Supervisory Board of ICDS is positive that Matthew Bryza, who has been involved in the shaping of international politics, will effectively contribute to the Centre's contacts."

Commenting on his new job, Bryza said: "Directing ICDS is a natural continuation of my diplomatic career, which has focused on helping Europe to re-emerge as a region that is whole, free and at peace. I was inspired throughout my diplomatic career by my colleagues and friends from the extended Baltic region, who have shared their energies, their insights and their lives helping NATO achieve a broad range of interests stretching from the Arctic to Afghanistan. I'm thrilled and honoured to begin this new chapter in my professional life here in Estonia."

The International Centre for Defence Studies was founded by the government of the Republic of Estonia in March 2006. The purpose of ICDS is to track and analyse global developments in defence and security domains, with a more specific focus on issues of special interest to Estonia.

ICDS organises annual Lennart Meri Conferences dedicated to foreign policy issues, publishes *Diplomaatia*, a foreign policy monthly, and co-organises the Annual Baltic Conference on Defence (ABCD).

## Estonians develop camera stabilizer to take Hollywood technology to the masses.

In August 2011, the photo- and video production company Hotshot Studios received an innovation share grant from Enterprise Estonia valued at 12,000 euros for the product development of its camera stabilizer. "The money will go directly to the University of Tartu, where the prototype is being made and tested," said Taaniel Reimers, a board member of Hotshot, who explains the principle of allocating innovation share grants: the support is not given to the applicant (the company) but to the collaboration partner (the university).

The camera stabilizer is a gadget shaped like a bow, which is fixed under a hand-held video camera. Its task is to minimize the shaking of the hands and the camera during shooting, which can lead to lower quality in the picture. The market is currently dominated by the Steadicam Merlin, invented by the Hollywood cameraman Garret Brown. Hotshot admits that this product has provided them with style ideas, but says that they are not creating a copy. "The Merlin is quite tricky to use and the setting-up process is also very complicated," says Reimers. "In addition, there is the price issue," he adds.

Hotshot's target group is photography enthusiasts: those devotees who buy a thousand-euro camera and go out after work to take some photos, the people who offer to be the videographers at family reunions. The sales of the more expensive cameras (but not professional ones) indicate that there may be approximately a hundred million such people in the world. "It is clear that we are not creating this product for the Estonian market," says Reimers. "The market here is small and the price range of 300-400 euros is too high. From the word go, we have been orientated towards the rest of the world."


The goal is to create two to four different versions of working prototypes in a month. At the same time, the company is working on solving production problems. It makes sense to outsource some parts, although Reimers claims that there is nothing in the camera stabilizer which cannot, in principle, be produced in Estonia. Once the working model is ready, the next stage will commence: branding, marketing, creating the sales network and commencing production.

This is very expensive and the Hotshot owners themselves do not have the required funds. "We are looking for an investor," says Reimers and reiterates the ambition: "There is no point in producing single items for the Estonian market. Our target is the world."

## Loudspeakers made by an Estonian company have once again won an esteemed innovation award

The new model XA Diamond of Estelon loudspeakers has just won the prestigious International CES Innovations 2012 Design and Engineering Award.

This is the second award given to the company, which has been on the market for only one year. Last year Alfred & Partners OÜ won the innovation award for its first XA model. This year the jury considered the development in technology and innovation to be so noteworthy that the new model was awarded as well. Estelon XA Diamond loudspeakers won in the category of quality audio equipment.

The man behind Alfred & Partners OÜ, which develops and produces quality loudspeakers in Estonia, is Alfred Vassilkov, who has designed and built loudspeakers for nearly 27 years. For example, Audes loudspeakers are also designed by him.

The purpose of the award, which has been given out for a quarter of a century, is to recognise home electronics appliances with outstanding design and technical solutions. The jury of the competition consists of independent top designers, engineers and technology journalists. The prize is awarded by the Consumer Electronics Association, which organises the largest annual technology fair, called International CES, in Las Vegas.

## Tartu company puts pedestrian navigation into mobile phones

So far, navigation applications have been produced for car drivers. Jaak Laineste is creating appropriate map solutions for smart phones which are meant for pedestrians.

"Our aim is to simplify pedestrian navigation in the map applications of mobile phones," explains Laineste, the founder and Manager of Nutiteq OÜ, based in Tartu. The company received an innovation support grant in the sum of 4,000 euros from Enterprise Estonia to do just that. As this particular sum will be spent on patenting the product, Laineste does not want to go into much detail.

But there are still some things we can discuss. Everybody is familiar with navigation these days, due to navigation equipment and corresponding map applications in cars. "The existing solutions have all been created for drivers," says Laineste. This could mean that maps do not show paths and roads which are inaccessible to cars, although pedestrians or cyclists could use them. It could also mean that applications, by default, place a car on the road, even if it is only parked by the side. Of course, pedestrians can orientate themselves with the help of navigation equipment or Google maps on their phones, but in essence those products have not been created for pedestrians. "We want to create an application for pedestrians, taking into account the fact that pedestrians find it difficult to press buttons on their phones or to search for addresses whilst they are walking on the street."

Nutiteq was established four years ago, but it has already established itself as a niche company. The company has its own problems and advantages. "For example, we are not that good at marketing and sales," admits Laineste. This means that very little has been created for, and even less sold to, end consumers. The income and customers come from elsewhere. For example, one of the largest clients is www.trapster.com, a global map application with over 13 million end users, which warns drivers about the location of speed cameras. The application uses software created by Nutiteq. Other clients include mobile operators and other companies selling applications to end users. "Also, in the case of pedestrian navigation, it is unlikely that we will sell directly to consumers," explains Laineste. "The goal is to get the license and to resell it to Google, for example."

## In 2011 Estonian mobile telephony celebrated twenty years of existence

Estonia was the first country in the world to introduce mobile parking. Mobile phones have taken the place of wallets and pens used for digital signatures. Our smart mobile applications are praised worldwide. The story of the mobile phone illustrates the story of Estonia's development over the past twenty years. The Tallinn TV tower is one of the symbols of the events which changed history twenty years ago. For exactly twenty years, Estonia has had mobile telephony, and one of the first support masts for mobile networks was located on the TV tower.

In the heat of the summer of 1991, the newly operating mobile network was an important connection to the Western world. A Swedish corporation provided the first mobile phones, which looked like cases, to Estonian public institutions. Lennart Meri, then Minister of Foreign Affairs, was the first to receive one, and two more phones were given to the Office of the Prime Minister. The network standard was NMT, which functioned well from the TV tower, although calls could be tapped.

The first mobile phone sold in Estonia cost 27,000 kroons (1725 euros). Considering that the average monthly wage was 115 kroons (7 euros) at that time, the average person would have had to work for twenty years to afford one. For the average wage, you could make about a half an hour of calls on the network.

The next mobile telephony generation – GSM – turned out to be revolutionary. Several operating companies could use one network. It took ten years for mobile telephony to become affordable by the masses, resulting in vigorous market competition between mobile operators.

## Veiko Sepp, who has successfully managed Ericsson Estonia and Ericsson Baltic subsidiaries, accepted the position of Head of Customer Division, Region China and North Asia in Beijing.

Sepp will manage a unit whose clients are the large telecommunications and infrastructure companies of the region, reported Ericsson.

Sepp says the opportunity to work in the rapidly developing Chinese market greatly helped in making up his mind. "My experiences to date with setting up Ericsson's subsidiary companies in Estonia, Latvia and Lithuania and active participation in the management structure of Ericsson Nordics provides me with the confidence to move forward. It is, of course, an exciting offer as, from the point of view of global economic development, China is one of the most interesting markets at the moment," said Sepp.

## Turkish Airlines to open Istanbul-Tallinn route

At the opening of the Estonia-Turkey Inter-cultural Trade and Education Association (EESTURK) this May, Estonian Foreign Minister Urmas Paet said that hopefully it would become possible to fly directly from Tallinn to Istanbul within the year. The Foreign Minister emphasized that Estonia is interested in increasing economic co-operation with Turkey.

"The opportunity to fly direct would provide an impetus for business and trade relations, as well as the promotion of tourism," he stated. He added that in 2011 Turkey was Estonia's 22nd leading trade partner. Estonia's direct investments in Turkey in 2011 totalled two million euros and Turkish direct investments in Estonia totalled 2.8 million euros.

Two weeks later, during a meeting with Routes Europe 2012, the Turkish national carrier Turkish Airlines announced that it would launch an air route between the largest Estonian and Turkish tourist destinations in the near future. According to Turkish Airlines, details of the flight schedule and launch dates are still undetermined, but there will be at least three flights a week.

Representatives of the airline said that this was not an ad hoc decision, but a result of longer preparations and part of the airline's expansion programme.

The airline is not only hoping to take Estonians to Turkey for vacations, but is also hoping for a share of the market for passengers in transit to other locations. "This new service will allow Estonians to travel to Asia, Africa and beyond from Tallinn Airport," said Erik Sakkov, Member of the Management Board at Tallinn Airport


## City of Tallinn welcomes London Taxi

The London Taxi Company has sent an inquiry to the Estonian Ministry of Economic Affairs and Tallinn City Government as to whether the company can expand its operations to Tallinn. The letter, signed by Ross MacKrennon, the international sales manager of the company, promises better quality of service than currently offered.

According to MacKrennon, London taxis are specially designed for the purpose and are therefore comfortable, secure and enduring. Besides supplying cabs, the company is also proposing offering special training for drivers.

Andres Harjo, the head of the Tallinn municipal transport authority, said that while all newcomers on the taxi market were always welcome, London Taxi would not be getting any preferential treatment nor be able to replace existing operators.

"They can build up a position where their services are more attractive than those of their competitors. Whether there is a market for them here in Tallinn, only the market itself will decide," said Harjo.

The company has been extremely successful in Azerbaijan's capital Baku, where it has significantly improved the overall taxi service and helped to reduce the number of pirate cabs, MacKrennon said.

London taxis also operate in several other locations overseas, including Saudi Arabia and Bahrain.

## Elcoteq Eesti has a new owner

éolane

**The French service provider of industrial electronics éolane purchased the stocks of AS Elcoteq Tallinn, which were previously owned by the currently bankrupt company Elcoteq SE.**

Due to the change in ownership, the new name of the company will be Eolane Tallinn AS. Chief Director of éolane, Marc Pasquier, said that the decision to expand into northern Europe was a strategic one which would enable the company to focus on new markets and to serve customers in northern Europe.

According to Pasquier, the company wishes to broaden the number of services offered in the Tallinn plant, developing it into a strong and independent subsidiary which offers existing and new customers services, ranging from product and test development, production solutions, procurement of components and production to post-sales services.

With its 2,400 employees and an annual turnover of 300 million euros, éolane is a French electronic manufacturing services provider founded in 1975. In addition to electronic manufacturing services, éolane offers its customers original design, development and manufacturing services in plants based in France, China, Morocco and Tunisia.

# Maria Alajõe:

# “Friends will get first-hand experience in Estonia“

Photos: Johannes Arro

One of the main speakers at the 2011 symposium "Quo vadis Estonia?" was Stephen Kuhn from Ernst & Young.

The central part of the annual meeting is a symposium where discussion is launched by President Ilves.

Estonia's Friends International Meeting is a joint initiative launched by Enterprise Estonia, business tycoon Mr. Margus Reinsalu and President of Estonia Mr. Toomas Hendrik Ilves. The first Estonia's Friends International Meeting was held in August 2010 and the second one in the beginning of July 2011 during the National Song Festival. In 2012, the meeting will be held from July 5th to July 7th 2012. The main speakers will be Professor Timothy Garton Ash from the University of Oxford and the President of Estonia, Mr. Toomas Hendrik Ilves.

## Who are Estonia's friends?

Estonia has lots of friends but we will invite to the meeting those who have already benefited Estonia in some way or whose attitude towards Estonia should be turned positive because their opinion matters. Our friends are opinion leaders, foreign investors, and people active in public, economic and cultural life. Most of them have already had some contact with Estonia one way or another but here they will get more meaningful and more personal experience.

## How many friends do we have?

Well, the circle is wide. Every year, we host about a hundred guests but there are definitely many more good people out there. We need to expand our network in the world and refresh the existing one. After all, one must cherish their friends! One way to do this is keep them posted with your activities all year round through a social network.

## Where do our friends come from?

Most of them are from Europe but also farther, from Asia and America.

## Do other countries summon their friends like that as well?

I haven't heard of a format similar to ours, however, many countries have programmes introducing themselves. There are countries who purposefully invite decision-makers of various fields to get acquainted with their country; they do it in the framework of comprehensive programmes. Estonia is not operating on such a wide scale – we focus on good informal relations, so our event is unique.

Such a format is the most efficient way to give insight into our way of thinking and life. We would not achieve such an effect through press and advertising. During this visit, aspects are introduced that cannot be learned about from the public press domain. After all, we invite them to our home and this is a very warm and immediate way to communicate. Of course, we want them to pass on their experience to their friends. Seeing is believing!

## What does a day with Estonia's friends look like?

From the Estonian side, friends are hosted by true patriots of our country who personally introduce how our country works: the Prime Minister will demonstrate the principles of the e-State, Mr. Jüri Kuuskema, well known Estonian historian will guide a tour in the Old Town and our world-class conductor Neeme Järvi will conduct a concert in the evening.

The central part of the meeting will be a symposium where discussion is launched by President Ilves. At the symposium, we also look forward to hearing from our friends the opinions and recommendations on how Estonia should move on in the global context. Indeed, we have been receiving inspiration and courage that we are on the right track. Last year, for example, a very interesting debate arose on the topic of taxes. So, we do not only talk and show but also listen and pay attention. Already, these events have brought more foreign investors, press coverage and wider renown to us.

## Why does a country need friends?

Friends mean we are not alone in the world. They do not exactly need to be useful, although in the Estonian history, there have been moments when we really have needed our friends... As the old saying goes: better to have 100 friends than 100 roubles. This is still valid.

## 130 years
### of population censuses

The eleventh National Census in Estonia took place between 31 December 2011 and 31 March 2012. Within the first month, people had the option of filling in an online questionnaire. Those who did not participate in the e-Census were visited by census takers.

Earlier censuses had been carried out in 1881, 1897, 1922, 1934, 1941, 1959, 1970, 1979, 1989 and 2000. The next census in Estonia will take place in 2020-21.

The results of the National Census 2011 will be published over the course of 2012-13.

# How Many Of Us Are There?

Text: Urmas Vahe
Photos: Statistics Estonia

**This may come as a surprise, but according to the Estonian National Census, men up to the middle-aged bracket slightly outnumber women in the same age range in Estonia.**

Over the last couple of years, national population censuses and surveys of living quarters have been carried out in most developed countries. There have been some surprises everywhere, as the results have to a greater or lesser extent deviated from the accepted statistics.

This spring, Estonia held its eleventh National Census. Priit Potisepp, Director General of Statistics Estonia, talks about the kind of conclusions which have been drawn.

For one thing it has become evident that, contrary to the situation in many countries, there are only 95 women per 100 men in the 'up to forty years old' age category living in Estonia. This ratio is usually the inverse elsewhere in Europe. In Estonia, however, the situation changes when we get to the older age groups. For example, in the 50s age range, there are already 116 women per 100 men and among older people this ratio is even higher: 154 women to 100 men.

population and housing census

## Estonia has demonstrated its "e-ability" and capacity in Europe and beyond. Why was the Census not carried out on the basis of existing registers?

Supported by the UN, population and living quarter censuses are carried out approximately every ten years worldwide. Very different methods are used in different countries. In most cases, the censuses are carried out in the traditional way – census takers go from door to door and carry out interviews. There are fewer than ten countries in the world which use solely the national registers to carry out the census and conduct no interviews at all. Most countries, however, do not have this opportunity due to a lack of registers.

Population censuses have been carried out for over 130 years in Estonia – the first was organized in 1881. The most recent Census differed greatly from the previous ten, and was especially innovative. For the first time ever, all permanent Estonian residents had the opportunity to fill in an online questionnaire. Census takers only visited those people who had not completed the survey online. The census takers were all equipped with laptop computers – as a result it was the first census in Estonia to be carried out on a paperless basis. Furthermore, we also used the information available from the national registers as far as possible, and hence there were fewer questions to be asked.

Work is in progress to create national registers which will provide us with all the information we need to complete the census a decade from now. We are currently working on developing the methodology. As a result, the next census in 2020/2021 is likely to take place on the basis of the registers.

## Why was the Census carried out in 2011? When did this idea emerge? What preparations were involved?

It is the UN itself which coordinates the organization of population censuses throughout the whole world. The UN declares new census rounds every ten years. For example in the 2010 census round, most censuses took place during 2010 and 2011.

In the European Union, all censuses were carried out in 2011. Estonia commenced counting the number of residents and living quarters on 31 December 2011.

The population census procedure is very labour intensive. As a result, preparations for the census in Estonia started as early as 2006. During those five years we fine-tuned the methodology, created the necessary IT programs for e-Census work and the work of the census takers, prepared the information campaign and recruited and trained the staff. A year before the real census took place, we also carried out a mock-version on a smaller scale.


## Estonian census takers were easily identifiable by their unique scarves and bags.

"As we needed an easy way for people to recognise our census takers, we made them special scarves," stated the Communication Manager of the Estonian Population Census, Kristo Mäe.

The census takers could be identified by their photo-ID, blue scarf and briefcase. "The scarves were inspired by those worn by football fans. The population count is a work which comprises a great mission, and in this sense the participants have to be a kind of "fan". Of course another reason for choosing a scarf was the timing of the census and the practical need – it is usually cold in Estonia in February and March." Since 66 per cent of Estonian residents filled in the census questionnaire on the Internet, many did not actually see a census taker in person. Therefore whenever a census taker was spotted on the street, wearing the special scarf, people got quite excited!

## Eighty eight per cent of the world's population has been counted

According to data released by the UN, during the census round of 2010, 288 population censuses had taken place by 1 June. Over 6 billion people, or 88 per cent of the world population, have been counted; 44 population censuses are still to be carried out. Only seven countries have no plans to organise a population count.

According to the initial data of the National Census of Population and Living Quarters; 1,294,236 permanent Estonian residents were surveyed. Out of these, 693, 884 were female and 600,352 male. In comparison with the previous population census, the number of permanent Estonian residents had declined by 75,816 or 5.5 per cent.



### Was there anything which seemed impossible or at least a challenge from the outset?

A population census is a very large and complex undertaking, but nothing is impossible. It is true that this time we carried out the census in a totally new way. We were very ambitious with regard to the e-survey and obtaining the results required a huge effort. For example, in comparison with previous censuses, the information campaign was unprecedented. The Estonian people really went along with it as well. Sixty six per cent of the population filled in the online survey. Nowhere in the world have such participation rates been achieved. Hitherto, Canada had had the best results in an online survey, with 54 per cent of the population participating.

### The Board of Statistics organized large recruitment competitions to find the appropriate interview staff. Who was the "typical" census taker?

To carry out the census we recruited 2,500 people on a temporary basis. To put this into an Estonian context, we don't even have many companies with such a high number of employees. So it was an enormous challenge. The census takers had to be computer-literate, speak several languages and be good communicators. It was difficult to find such people for a temporary period, but as our recruitment campaign lasted for almost half a year, we succeeded. It could be said that the team of census takers represented a cross section of Estonian society. When we carried out our internal statistics investigation, we discovered that the average census taker was a 44-year old female, who drove a Volkswagen! The competition for the jobs was intense – for instance more than forty people applied for one HR position. More than 12,000 applications were received for all the positions combined.

### Was the questionnaire well-received?

In order to facilitate the participation, each question in the questionnaire was thoroughly thought through. We received a lot of feedback stating that it could be filled in quickly and easily. We were also often contacted and asked why one question or another had not been included. People were expecting a much longer questionnaire. In this sense we can say that Estonian residents were supportive of the census. Furthermore, according to public opinion polls, over 90 per cent of people considered the census to be necessary. The census provides answers to many of society's questions and so people are generally willing to participate.

### Now that the census is behind us, did the results offer some surprises, either positive or negative ones?

We consider the Estonian Population Census to have been highly successful as it has provided us with quality data, on the basis of which we can collate various demographic and socio-economic statistics.

The results which have been published to date are only initial results, but we can already see the disturbing trend that the Estonian population is continuing to converge on the capital, Tallinn. The other parts of the country are consequently losing people. But this is the reason we carry out national censuses, as without them we could not reach such generalizations.

## Did you manage to count all the people and are the results reliable?

It is the ideal target of all population censuses in the world to count each and every person. It was also our goal, which we expressed in the slogan: "Everyone counts!" Life, of course, is not ideal. For example it was difficult to reach people whose jobs make them very mobile. This is why we really focused on the information campaign to let everyone know that the census was taking place and what the opportunities were to participate.

For the first time the actual census-taking process lasted for three months to give people the chance to either fill in the online survey or to meet with a census taker. In conclusion we can say that the data we gathered is of a highly reliable quality.

## You have promised to release the final results by the end of this year. Is it likely that there will be some significant changes?

As we collected data electronically during this census, we will be able to publish the results faster than in the case of previous censuses.

At the end of May we published the initial results. In the summer and autumn we will carry out an additional analysis of the data and after that we will be able to publish the final results of the census. The data accumulated is particularly rich and therefore we will publish results on the basis of different themes between now and the end of the next year.


# E-census terminates with a **world record** in Estonia

The national Population and Housing Census took place from 31 December 2011 to 31 March 2012 for the eleventh time in the territory of Estonia.
The electronic census or e-census was conducted during the first month, enabling the permanent residents of Estonia to fill in the questionnaire on the Internet. Those who were unwilling to participate in the e-census were visited by census takers between February 16 and March 31, 2012.

In August, Statistics Estonia commissioned the Faktum & Ariko research agency to survey 500 people aged 15–74 from all over Estonia. "The results of the survey carried out before the actual census were encouraging and suggested that Estonia might set an e-census world record," said Priit Potisepp, Director General of Statistics Estonia.

To the question "In the Census of 2011, it is possible to choose whether to fill in the questionnaire on the Internet or to answer the questions in the presence of a census taker. Which option will you use?", 66 per cent of those surveyed replied that they would prefer to answer questions online, 27 per cent would be willing to receive a census taker in their household and 7 per cent did not reply.

The preference to fill in the questionnaire online was higher than the average among people aged between 15-34 and 35-54 years (80% and 75% respectively) and among those with secondary and higher education (66% and 78% respectively). The preference to receive a census taker in their household was higher than the average among people aged between 55-74 years (58%), among lower income groups (41%) and among those with primary and basic education (42%). Seventy-seven per cent of everyday Internet users preferred to participate in the online version of the Census and 16 per cent of people who use the Internet daily preferred to receive a visit from a census taker.

According to official data, in the e-census the Personal Questionnaires had been completed on record of 815,467 persons, which is over 62% of the estimated population of Estonia. Previously, the largest number of electronic census participation of 54.6 % was reached in Canada.


**In March 2011, the Estonian government signed a contract with the Mitsubishi Corporation for the sale of ten million emission allowances, in order to initiate the Electric Mobility Program in Estonia. The program comprised three parts: first the Ministry of Social Affairs have obtained 500 Mitsubishi i-MiEV electric cars as samples; next the Ministry of Economics and Communications has developed a grant scheme for the acquisition of electric cars by private persons, and third they have developed a national charging infrastructure for electric cars. Both the grant scheme and the building of the charging network are being administered by the KredEx Foundation.**

Text: Ille Grün-Ots
Photos: Atko Januson, ABB, ELMO

# Estonia First Country in the World To Have a Nationwide Charging Network for Electric Cars

The aim of the program is first to promote the use of electric cars in Estonia and second to fulfil the goal of expanding the use of renewable energy in transport by 2020. Estonia is the first country in the world to create a national charging network for electric cars on the basis of renewable energy.

The Electric Mobility Programme (ELMO) is led by **Jarmo Tuisk**, who began working on this issue in the Ministry of Economics and Communications and has today moved on to a position at KredEx. KredEx was founded in 2001 by the Ministry of Economics and Communications with the goal of improving financial opportunities for Estonian companies, managing credit risks and enabling people to build or renovate their own homes.

## With the advent electric cars Estonia will no longer be dependent on overseas fuel supplies

"Electric mobility has been a topic for us since the end of 2008. In 2009, we proposed that the ministry should consider the issue of electric vehicles. This is important for Estonia for several reasons. First there are the climate and environmental policy aspects – to make transport cleaner and to reduce air pollution in cities. Second, it is important to reduce our dependency on foreign fuel. Importing oil makes us very dependent on others. If we are able to use our own fuel – electric cars work on renewable energy, so-called green fuel – it makes it all really worthwhile," explains Tuisk.

In 2010, the project came to life, mostly thanks to the sales of unused Estonian emission allowances. "The sellers of emission allowances always outnumber the buyers. The potential buyers are looking for attractive projects throughout the world. Hence this is an exceptionally competitive market and projects have to be innovative. The Mitsubishi Corporation was interested in us because they saw a country which wanted to build a nationwide network of electric car charging stations and to purchase a considerable number of electric cars. Mitsubishi was also interested in introducing their latest electric car model in Europe and in getting some test experience," explains Tuisk about the background of the deal.

The agreement was made in principle around Christmas 2010. The following months were spent on negotiating details and the contract was signed in March 2011. According to Tuisk, this contract entails three things. It is first a large showcase project, as the cars are to be distributed to public service providers. "507 electric cars were meant to be allocated to social workers. It is a great initiative as this way the cars will have to be taken outside the cities and thereby provide us with real experience of how they cope in different conditions. This is imperative as the technology is so new and there is limited testing experience throughout the world," says Tuisk.

The first cars allocated to social workers arrived in Estonia at the end of October 2011 and were distributed to their recipients in Tallinn and Tartu. Local authorities were provided with slow chargers for battery charging – these were only meant for the cars assigned to social workers.

Because local authorities did not ultimately, however, wish to acquire the allocated number of electric cars, the rest are to be distributed among other ministries and public bodies, such as the police.

The second part of the contract enables ordinary private persons to acquire an electric car. These of course don't come cheaply. "Electric cars are expensive, as they are new to the market and they have low production volumes. In order to provide people with the option to buy an electric car, we have halved the price. This again comes from the money gained from emission allowances, through grants paid by KredEx," explains Tuisk.

Jarmo Tuisk, who has been leading the ELMO project from the very beginning, is also driving an electric car


The third part of the agreement has the longest lasting effect – building the infrastructure of electric car charging stations. "In planning this we based our thinking on today plus a further five to seven years. In other words: we can use the money from emission sales today, not in five or seven years. Therefore it makes sense to make the investments today which we really need in the future," Jarmo Tuisk explains.

## With the support of the grant, an electric car will cost the same as a regular one

The grant constitutes 50 per cent of the purchase price of the car, or up to 18,000 euros, whichever is lower. This makes the price of an electric car comparable to and competitive with that of a petrol-fuelled one," explains the project manager.

All Estonian citizens and overseas residents in Estonia with a long-term or permanent living permits, as well as registered legal persons, may apply for the grant. In addition, Kredex supports, to an amount of up to 1,000 euros, the purchase of the wall box and any installation costs. In order to receive this support, it is necessary to get a quote from an electric installation service provider.

There are sufficient funds to support the purchase of about five hundred electric cars. In order to be eligible for support, the car must be bought within the European Economic Area or Switzerland and it must also have an EU type-approval. The car must have at least a two-year guarantee and the battery a five-year one and the car must be bought for its first-time use.

When the car to be purchased has been selected, the buyer needs to submit an application form to KredEx with the price offer of the car dealer. When a positive grant decision has been made, the client signs the contract with the car dealer, which then needs to be submitted to KredEx together with the payment application. Electric cars can also be leased as with any other car.

Applications for grants can be submitted until 30 November 2012 or as long as funds are available, whichever comes first. As of mid-June, 30 applications had been made to KredEx. "This is fewer than we expected," says Tuisk. "There are several reasons why the situation is as it is. First, the choice of electric cars available is small. For example the Nissan Leaf only became available on the Estonian market in April although we hoped it would be here by January. With the arrival of the Nissan, the interest in electric cars has significantly increased. People who are used to driving a car of a certain size will not buy anything smaller. The electric cars available to date, namely the Mitsubishi i-MiEV, Citroën C-Zero and Peugeot iOn are all small cars, suitable for a single person or as a second family car. But the Nissan is already established as a family car. We are also waiting for an offer from Renault," says Tuisk.

"Interest in cars is usually seasonal anyway: people usually buy in late spring and then it gets quiet and then in September they start to buy again", he goes on. "The car sellers who have electric car models are very enthusiastic. Mitsubishi has accounted for this in its strategy. Furthermore Nissan believes that electric cars are no mere sideline, but a decision in-principle. A delegation from Nissan met with the Estonian Minister of Economics and Communications last autumn before they made the decision to bring their electric car onto our market".


"Of course there are car manufacturers who, instead of investing in electric cars, have made different strategic decisions. For example Toyota has developed hybrid cars and some other car producers have been talking about eco-diesel. But as regulations regarding $CO_2$ emissions become tougher in Europe, it is clear that no car producer will dodge the issue of electric cars in the next decade," believes Tuisk.

A survey carried out last October by the MA students of the Communications Institute of the University of Tallinn, demonstrated that eleven per cent of people surveyed, or every tenth person, considers the purchase of an electric car within the next five years to be likely. It is becoming evident that people mostly value the environmental sustainability (eighty per cent of respondents), lack of fuel cost (sixty six per cent) and state support in purchasing an electric car (sixty three per cent). The most negative aspects were seen as the distance travelled within one charging session (seventy one per cent), opportunities of charging (fifty nine per cent) and price (fifty seven per cent).

## Fast-charging network to be completed by autumn

KredEx is preparing the locations of fast charging stations: electrical communications, agreements with landowners etc. On 1 July 2011, KredEx announced a public procurement for the design of 507 slow charging stations. This tender was won by ABB AS; the first slow chargers for social workers were already installed by 30 November 2011 and the second half by 31 March 2012.

In August 2011, KredEx also announced the procurement for the purchase of the fast charging network and its operating service. The goal of the procurement was to buy 200 fast chargers of electric cars (this number was later decreased to 160) together with installation and operating service for maintenance and administration for five years. The winner was chosen in December and it was once again ABB AS.

"It is a great honour for ABB to develop the first countrywide fast charging network for electric cars in the whole world, and that this is in Estonia, which is known as an e-state," said Bo Henriksson, Head of ABB Baltics. "Our local ABB branch, together with partners from G4S and NOW! Innovations, is working hard to make Estonia the pioneer of electrical mobility in the world."

Henriksson adds that the fast charging technologies of electric cars are becoming a strategic business area for ABB Group. "We in ABB are convinced that precisely the nationwide network of charging stations will encourage people to think about purchasing an electric car," says Henriksson. "With liquid fuels one can refuel only in petrol stations, with electricity you can in the future charge at home, in the office, in front of the shop, in parking lots, and so on."

The KredEx procurement conditions have prescribed that the charging stations have to be installed next to busy motorways and in all residential areas with more than 5 000 inhabitants. Fast-charging stations can be no more than 40-60 kilometres apart from each other. In February 2012, KredEx published the list of fast-charging stations for electric cars, with 160 locations. A hundred of these are located in cities and 60 by the major roads. From the bigger towns, 27 fast-charging stations will be in Tallinn, 10 in Tartu, 4 in Pärnu and two in Narva.

"The aim of the charging network is to provide electric car owners with a sense of security, promising that they will never be stuck on the road because their battery is empty," explains Tuisk.


## The first fast-charger installed in the beginning of June

On 7 June 2012, ABB installed the first fast-charging station for electric cars in the business park in Ülemiste City in Tallinn. The first two months will be a testing time for the whole system. No later than the end of July, when according to plans twenty charging stations will be installed all over Estonia, they will be opened to the public.

The charger installed in Ülemiste City is the first one which has specially been created for the Estonian fast-charging network. In the future all charging stations will be joined into one network, which will then be managed through a central system.

"It is not only the first nationwide charging network, but the first network to be supported by solutions such as remote support, remote management and various payment methods," explains Hans Streng, Head of the Electric Car Charging Network Product Group at ABB.

"The advantage of the new generation chargers by ABB is their modular architecture, user-friendly interface and connectivity with mobile phone payments and internet applications which Estonians are so accustomed to," adds Mart Tuuling, Head of the Business Unit of Control Engineering Projects at ABB Estonia.

The charging stations of ABB Terra can charge an Electric Vehicle (EV) in 30 minutes to approximately eighty per cent of the battery capacity. When charging via a regular alternating current plug, the same procedure takes eight hours.

Until the charging network is completely ready, charging is free for electric car owners. After the nationwide network is ready, it will become a paid for service. Users will have to sign a contract for the use of fast-charging stations and the monthly charge will be approximately 10 euros and the price of one charging session will be about three euros.

In practice electric car owners will not have to pay each time they visit a charging station, but they will be billed monthly according to their contract, in exactly the same way we pay for our electricity consumption at home.

The fast-charging network of electric cars has to be completed by 31 October 2012.

## Very low fuel costs

For every hundred kilometres, only one euro fifty to two euros is needed to be spent on fuel costs with an electric car. This is about five times less than a car running on petrol.

Comfort and security are equally important. Typically, electric cars have no gear box and accelerating and breaking is therefore very smooth. Steerability and stability on the road is greatly aided by the low centre of gravity. For example, the Mitsubishi i-MiEV has received four stars in safety tests, which is excellent for a small passenger vehicle, and the Nissan Leaf has received the maximum five stars.

The Mitsubishi i-MiEV city car and its peers the Citron C-Zero and Peugeot iOn have great maneuverability and field of vision. It is possible to turn around and park in even the tightest of conditions. Furthermore the annual maintenance costs of an electric car are fifty to seventy per cent lower than with a regular car.

The batteries from electric cars should last for about ten years, after which the battery still works but its capacity has declined by a quarter. It is possible to buy a new battery for the car, and the price of this should become much cheaper due to rapidly increasing production volumes.

Estonian electric cars have one more advantage: parking in municipal car park areas which would normally be paid parking is free in Tallinn, Tartu and Pärnu for electric cars. A driver simply needs to get a special permit from the local authority.

## What is renewable energy and where can you buy it?

Electric cars must be charged up with "green" electricity. Every car owner has the responsibility to acquire green certificates according to the distance travelled, which prove that the car uses electricity which has been made from renewable energy sources. With its grant, KredEx also gives the successful applicants green certificates in the amount of 5 MWh which enables to drive approximately 37,000 kilometres with the Mitsubishi i-MiEV.
Mr. Tuisk explains how "green" electricity use is bought in practice: "In reality there is just one type of electricity in the supply cable, both electricity produced by oil shale and electricity produced by either wind generators or the processing of biomass," says Tuisk.

In order to distinguish between types of electricity, a system of certificates has been created. In other words, the consumer who wants to purchase "green" electricity buys a certificate from the producer. At the same time, the number of certificates that a producer gives out has to correspond to the actual amount of real energy produced.

At the end of the year, car owners need to submit the number of kilometres driven to KredEx and accordingly buy the corresponding number of certificates from KredEx which has already purchased them directly from energy producers.

Green certificates are not expensive, costing between five and twenty euro per year. In principle this is just the cost of accounting. One should not fear that there is not enough 'green' energy available – we have so many wind turbines that we could have 100,000 electric cars on the roads!" Tuisk states.

Those electric cars travelling from Finland to Estonia have also been considered. In order to charge the battery here, they will have to buy pre-paid cards from tourism information points.

## The Pros and Cons of an Electric Car:

### The advantages:

- the car does not pollute the environment;
- less noise;
- no gear box;
- low energy- and driving cost (15 kWh/100 km or up to 2€/100 km);
- electric car does not need energy or pollute the environment in a traffic jam;
- electric engine is simple and reliable;
- high efficiency of the engine;
- when the car breaks, the engine becomes a generator and the car's kinetic energy becomes electric energy which is suitable for charging batteries;
- opportunity to charge the car at home;
- lower maintenance costs;
- free parking opportunity via the permission of local government in Tallinn, Tartu and Pärnu.

### The disadvantages:

- small driving distance (especially in winter);
- time cost during battery charge;
- price of the car;
- choice of models;
- cost and working life of the battery.

## The first Estonian electric cab will take to the road in Tartu

On 13 June, Ermo Kontson, will start making his taxi rounds in an electric cab Nissan Leaf, which he purchased with support which he purchased with the support of the state-funded grant scheme.

Until now it is impossible to book an electric cab through a centralized dispatcher as Kontson is a self-employed businessman. Kontson says that his car can be found in taxi stops but it is difficult to predict where the road will take him during the day. According to the price list, a kilometer in the electric cab will cost 65 cent, starting fare is 2.50 euro and a waiting hour 14 euro. These are not the lowest prices in Tartu, but not the highest either. Kontson aims to expand the number of electric cabs and, under the brand of 'Elektritakso' to have about ten cabs running by the end of the year. The Nissan Leaf cost approximately 40,000 euro and the state supported the purchase with 18,000 euro. Tartu will not be the first city to run the electric cab service. The first electric cab in Stockholm was introduced in May 2011 and in Japan the year before, to name a few.


The legendary Pobeda electric conversion has taken part in the Tallinn-Monaco Electric Car Race and won the electric retro and city car category award in 2012.

Photos: Triin Viljasaar

# Electric Marathon
# Tallinn – Monte Carlo 2012


The 2012 Tallinn-Monte Carlo Electric Car Race took place between 1st-10th June 2012. The purpose of the race is to promote and raise awareness of environmentally friendly electric vehicles, and to develop cooperation between different regions in Europe.

The race consisted of three phases: "Baltic Raid" (through Estonia, Latvia, Lithuania); "Mountain Raid" (Poland, Czech, Slovakia, Austria, Slovenia, Italy), and "Adriatic Raid" (Italy, Monaco).

The crew is made up of two people, and changes in the crew are allowed. The race is open to any electric cars that are permitted on the roads. During the race, drivers have to adhere to local traffic laws and are awarded points for finishing each stage in good time. Points are deducted for each minute they arrive either early or late.

The length of each stage varies from 90 to 170 km. Between each stage there is either a three-hour break for charging the batteries or a 8-10 hour break for overnight charging.

The winner of the 2011 race, the Tesla Roadster sponsored by MEPs Kristiina Ojuland and Gesine Meissner, at the start of the marathon in Tallinn.

"The opportunities for charging cars vary in different cities and countries" stated Jüri Tamm, Estonia's Honorary Consul to Monaco, adding that fortunately all of the participants had managed to locate necessary charging points throughout the race. "Thanks to the marathon, we have become much smarter about electric cars and will gain a lot from the experience," he said.
The route of the Electric Marathon Tallinn – Monte Carlo 2012 went via the following cities:

**Tallinn- Pärnu – Riga – Jelgava – Panevezys – Kaunas – Augustow - Ostrow Mazoviecka – Warsaw - Piotrkow Trybunalski – Kepno – Wroclaw - Hradec Kralove – Brno – Bratislava – Vienna - Wiener Neustadt – Graz – Maribor – Klagenfurt – Udine - Mogliano Veneto – Venice –Verona – Brescia – Milano –Torino – Cuneo - Monte Carlo.**

The race was started on 1 June in Tallinn, at the Theatre Square in front of the Estonia National Opera and the finish took place on 10 June in front of the Automobile Club de Monaco, at the same spot where the F1 award ceremonies are held.

The winner of the Grand Prix 2012 was the Olympic Casino Team with the Tesla. The trophy was presented by the patron of the Electric Marathon 2012, H.S.H. Prince Albert II of Monaco.

**Furthermore, awards of three categories were given as follows:**

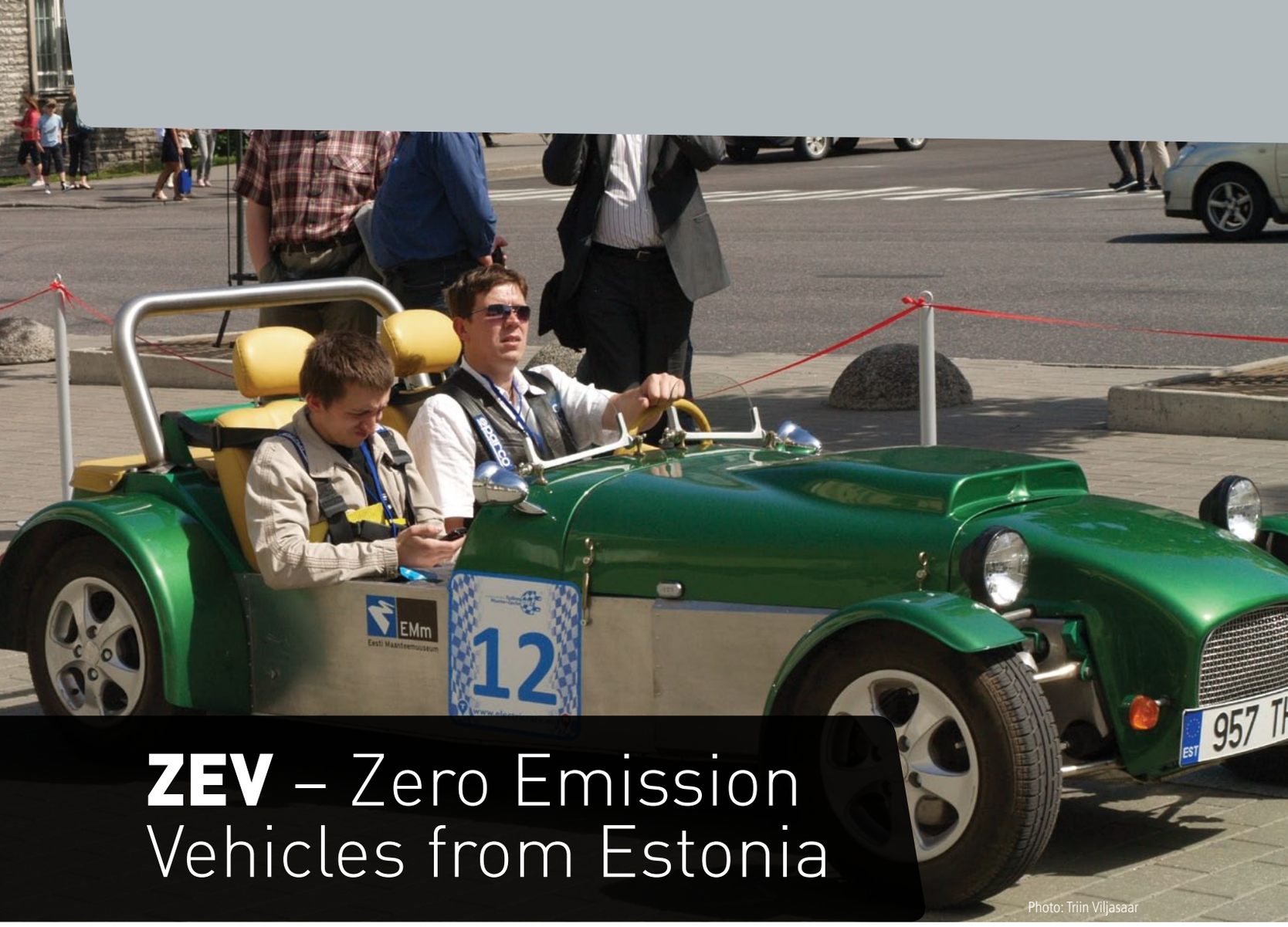
1. Electric motorbikes and scooters – the Impact team from Poland (Electric scratt).
2. Electric retro and city cars – the Tallinn City team (Pobeda).
3. Electric sport cars – the Olympic Casino team (Tesla).

A stop on the main square of Jelgava, Latvia.

## MEPs' sponsored car wins the electric car Tallinn-Monte Carlo race 2011

The Tallinn – Monaco Electric Car Marathon was organised for the first time in 2011, when the route was a bit different from 2012, crossing most of the Nordic countries as well as central Europe. In 2011, the electric car sponsored by MEPs Kristiina Ojuland and Gesine Meissner won the Tallinn-Monte Carlo Electric Car Race. Although sixteen cars started the marathon in Tallinn, only three managed to finish the race. Ojuland participated in the first and last stages of the rally.


The winner of the GP 2012, the Olympic Casino Team (Tesla) together with Baron Federico Bianchi, Vice Director of the Electric Marathon, H.S.H. Prince Albert II of Monaco, patron of the Electric Marathon 2012 and Jüri Tamm, Director of the Electric Marathon and Honorary Consul of Monaco in Estonia.




# **ZEV** – Zero Emission Vehicles from Estonia

Photo: Triin Viljasaar

**A pioneer in the electric car industry, ZEV Motors Ltd has taken the initiative, aiming to become the representative for many internationally known brands, as well as boldly developing its own products, becoming in the process nothing less than the Estonian e-car industry.**

ZEV Motors Ltd has been developing electric cars and light vehicles for the Baltic market since 2007. Products developed include: the electric L7E roadster ZEV Seven, the electric L6E child car and the electric L2E scooter ZEV Elve. Besides carrying out its own product development the company has been building electric car conversions for the Estonian market. To date, two electric conversions have been made – a Volkswagen Golf and a Pobeda.

## The first Estonian electric roadster – ZEV Seven

The first prototype of the Estonian electric sports car, the ZEV Seven, was launched in 2008. The Seven is not a family car, but a roadster. The controller (or brain) of the five-gear manual two-seater vehicle is manufactured in the USA and the basic model uses eight lead batteries, which take about eight hours to charge when connected to a standard 220V plug. The batteries last for 50-90 kilometers depending on the speed at which the car is driven. The ZEV Seven can reach speeds as high as 120 km/hr. But it is also possible to acquire a version of the Seven that uses lithium batteries and which runs up to 600 kilometers on one charge cycle.

The people at ZEV have done all the electrical work, but the bodywork itself was created by Valter Teppan's company, *Võidusõidutehnika* AS. The body is similar to that of the Lotus 7, designed by Colin Chapman in 1957. When designing the chassis of the car, the specifications given in Ron Champion's book *Build Your Own Sports Car for 250* were used to make the car both more comfortable for the driver, and more sporty.

## Concept 581C

In addition, ZEV Motors is engaged in the development of the concept model for a sports car. The concept 581C featured is the first M1 car model to be developed for the international car market. Top electric car design talent in the Northern European region has been put together to create the ultimate electric driving experience. The concept model 581C has an aggressive look combined with modern technology. LiFeYPO4 batteries give a full charge within 60 minutes, and are affected by cold very little, also giving a whopping 400 km range. The highly durable aluminum frame makes the car very light, safe and able to withstand the cold northern weather.

For further information see
**www.zevmotors.com**

**Teet Randma,**
Executive Director of ZEV Motors Ltd

ZEV Motors Ltd has been in business for five years and now is a good time to sum up our achievements in the field as well as to look into the future.

I have to admit that our initial business plan to offer electric cars to the Estonian market wasn't the best. Although Enterprise Estonia has supported our plan, the purchasing power and the awareness of the local market is still quite low. Building electric cars hasn't made us rich, but we have learned an awful lot.

Much talk is made by business lecturers on the importance of "thinking outside the box". But it is only when you have been dealing with something for a long time that you understand the real meaning of the thought expressed in the movie The Matrix: "There is no spoon", meaning that you will truly grasp the idea behind things, and boxes as such lose all their importance.

We are currently looking for investment in order to enter the international car market with our electric sports car model, as well as opening a car factory based on a new type of green energy in the Caribbean region. At the same time we have not abandoned the Estonian market – we plan to introduce a new, reasonably priced electric car model which has a range of 100 km.

The imminent development of the first nationwide fast-charging network for electric cars in Estonia, which will be both spectacular and unique throughout the whole world, will undoubtedly facilitate the local electric mobility program. Nevertheless, our government has as yet not come up with a plan for further measures to continue the development of environmental friendly transportation.

# Estonia's first EXO electric roller will start rolling in the Tehnopol Science Park in Tallinn

Tehnopol Science Park in Tallinn has received the first EXO electric roller, called the Neutrino MAX, created and produced in Estonia. With a maximum speed of 45 km per hour, the roller is well-suited for driving in cities. On one charge, it is possible to travel 50-60 kilometres.

EXO electric rollers have been entirely developed and designed in Estonia. Their specific characteristics include a unique software solution which makes it possible to maximize the efficiency of battery use, and a compact exo-body.

"It is always exciting to be the first customer. As the first user, we will be able to participate in the continued development of the product and provide essential feedback. We will involve other companies located in Tehnopol. The roller will not remain in a glass box," said Pirko Konsa, Board Member of Tehnopol, on receiving the roller with the series number 1.

EXO's target markets are European countries. Mainly, the roller will be marketed in Scandinavian countries, the Netherlands, Spain and Germany. The end cost of the product for consumers is approximately 2,500 Euro.

# Mobile Internet Boom A Boon For Ericsson

**Jonas Ygeby, Head of Ericsson Estonia, believes that the rapid development of mobile networks means good times ahead for the company**

Text: Toivo Tänavsuu

It seems these days, all we hear about is talk of the global economic crisis or the European debt crisis. In the midst of all of this, Ericsson Estonia seems to be doing well and looking optimistically into the future – we need mobile Internet more and more, therefore we also need the network appliances produced by Ericsson in Tallinn.

In May 2010, Ericsson initiated the production of support stations for 4G (fourth generation) communications, and one of its clients is a leading mobile operator in Estonia, EMT, which belongs to the Scandinavian TeliaSonera organization.

EMT has promised to set up about two thousand 4G support stations within the next six years, covering most of the territory of Estonia. The construction of broadband networks is also underway elsewhere and most of the equipment produced at the Ericsson Tallinn factory is being sent abroad, mostly within Europe.

"There are clear and evident trends in the telecoms world," explains Jonas Ygeby, the Swedish-born Head of Ericsson Tallinn. "Everything is going mobile. This evolution is driven by video, cloud-based services, the Internet and machine-to-machine connectivity. It changes how people behave and how they leverage mobility to communicate and to improve their daily lives, through new and existing services. Users now demand connectivity anywhere and anytime."

Central to such rapid development are the new and increasingly affordable smart phones and other gadgets using the Internet, such as the iPad. Ygeby points out that the total number of mobile subscriptions globally will reach around nine billion in 2017, of which five billion will be for mobile broadband. With an increased number of subscriptions, evolved devices and 24/7 connectivity to use them, Ericsson expects global mobile data traffic to grow fifteen times by the end of 2017 – a huge growth!

As Ygeby explains, access to the Internet is a prerequisite and will drive further build-out of mobile networks. By 2017, 85 per cent of the world's population will be covered by WCDMA/HSPA networks – these are exactly the kind of network appliances that Ericsson produces. These facts and forecasts have been drawn up by Ericsson based on in-depth data traffic measurements since the early days of mobile broadband, from a large base of live networks covering all the regions of the world.

Ygeby states: "The Tallinn Supply Site plays a key role in this development, as it is one of the Ericsson Supply Sites that has produced equipment for mobile broadband, i.e. 3G and 4G.
Our job in Estonia and all over the world is to manufacture and provide top-class communications networks, telecoms services and multimedia solutions, making it easier for people in Estonia and all over the globe to communicate."

Ericsson has been active in Estonia since 1996, but it expanded considerably in 2009, taking over the production side of one of the largest industries and exporters, Elcoteq Tallinn.

As recently as 2009 and 2010, the company experienced some difficulties. Because of the global economic standstill, many orders dried up. From the second half of 2010, however, the triumph of global Internet, as Ericsson managers call it, began. This market grew 60 per cent in a year, and doubled as early as the next year. The reason for this was the spread of mobile Internet and also IPTV, which was in turn promoted by the use of optical cable in Internet connections.

Back in 2008, the Estonian Government decided to implement a national broadband reform which means that all households, companies and authorities in the country should have access to broadband with speeds of up to 100 Mbps no later than 2015. Part of the reasoning behind this initiative is the fact that Estonia is one of Europe's most sparsely populated countries and there are few potential customers in the rural areas. As a result, the commercial operators have no financial interest in expanding the network.

After the decision, Ericsson was awarded the consultancy assignment and the company presented the solution, with the technical design of the network and the economic aspects of the impact the new broadband network would have on the society.

Today the main area of activity for the branch of the company based in Estonia is the sales and maintenance of operating equipment, planning and tuning telecom networks, system integration, network administration services and the production of electronics equipment. Whereas Elcoteq was better known as an assembly plant, with Ericsson the emphasis is on developing new products.

According to the vision of the company, over the coming decades, as technology advances infrastructure evolution will change the way we live, the way we work, the way markets function and the way societies act. Ericsson envisions what they call "a Networked Society", where everything that benefits from a connection will be connected – a world of 50 billion connected devices by the year 2020. According to the company, this could mean over 16 million connected devices in Estonia by the year 2020. Thus, the foundation for the networked society is being laid down by three forces: mobility, broadband and cloud services.

Ericsson believes that Estonia is deeply involved in realizing the potential of such a networked society, and so the work that Ericsson is doing in Estonia should be intrinsically connected with it. The company's Estonian engineers were involved with a project regarding an innovative solution for Smart Meter Communications, which won the European Smart Metering Award earlier this spring at the Smart Metering UK & Europe Summit 2012 conference in London.

How has the company explained this focus? Whereas utilities in Europe are busy introducing and extending communications capacity to collect the data from Smart Meters (and these kind of Smart Meters will also be available to all Estonian consumers from next year) Ericsson is involved in utilities with a new solution, which complement their existing investments in private communications infrastructure.

Ericsson Eesti is participating in research on solutions for energy saving and the Stockholm Royal Seaport project for developing prototypes. This project is the first of its kind in Estonia to be financed by Ericsson Research. Thanks to the strong engineering base of Ericsson Estonia, Estonians have also participated in various global projects of Ericsson in the USA, the Republic of South Africa, India, Rwanda and elsewhere. Those projects mostly cover the planning, integration and development of mobile service networks.


Jonas Ygeby confirms that Ericsson has been successful in employing the necessary qualified staff in Estonia – there are enough competent and motivated people. Over the longer term, the company plans to cooperate with Tallinn University of Applied Sciences, Tallinn Polytechnic School and Tallinn University of Technology, in order to help train the necessary workforce for the future of the company.

Overall, Ericsson feels openly and strongly that Estonian people are eager to learn new things, and to do it very rapidly. Estonians have a positive mentality and the internal drive of people who want to achieve something.


Text and photos: Toivo Tänavsuu

# Kalle Kuusik: Estonian electronics industry has reason to be optimistic

**Toivo Tänavsuu interviews Kalle Kuusik,**
**a man who has worked in the Estonian electronics industry for seventeen years and who today runs the Tallinn factory of the French company éolane. Kuusik believes that Estonia has a future in electronics in spite of the present shortage of engineers.**

**In May 2012, éolane took over the Tallinn-based production branch of Elcoteq SE which had been experiencing difficulties.**

## Who is Kalle Kuusik?

- Born in 1966 in Viljandi. Lives in Otepää.
- Studied at Tallinn Polytechnic School and the University of Tartu.
- From April 2012, Managing Director and CEO of éolane Tallinn.
- Has previously worked for Clifton, Enics Eesti and Elcoteq, run a restaurant and taught physics in the Aegviidu Basic School.
- Hobbies are sport and photography

## Seventeen years ago your career started here in Elcoteq, the flagship of the Estonian electronics industry...

It was 1995 when I took up the position of product engineer at Elcoteq. At that time it was already a large factory with 700 employees. For ten years I worked in various jobs at Elcoteq, but unfortunately I could not keep my mouth shut.  I wanted things to run perfectly. I could not stand by and watch if something did not function well. This was noticed and one day I was told: do it yourself if you can do it better. That was my first experience as production manager. All of a sudden I had 200 people under me.

Back then Elcoteq mostly produced computer screens. The production was in Finland but it was mostly out-sourced to the Tallinn factory. Later on we started to produce mobile phones for Ericsson and Nokia in Tallinn.

After that I became interested in broader self-development. For four years I worked in sales and in customer relations management for one of Elcoteq's largest clients, Nokia. In 2005, I started working as General Manager of Enics Eesti. In that position I really benefited from both my production and sales experience. Running a company is a stressful job – it is something you do 24/7. I was there for five years. For another six months I subsequently helped Clifton, the producer of semiconductors.

I moved on when éolane entered the picture. It seemed like a company with the right size and profile. There was scope to participate in the development phase.

Earlier, in Elcoteq, there had been no need to carry out new sales or financial management as this was mostly being done outside Estonia, but within the Group. Those activities were highly centralized.
éolane, which was born in France, is different in that sense. Independent units are joined into one group but they still maintain their independence. This puts the éolane factory in Tallinn in an interesting position. New sales are a big challenge for us and we are currently recruiting. But in Estonia, people who can immediately grasp this sector and go directly to potential clients to pitch, can be counted on the fingers of one hand. It is both a great challenge and an opportunity for new people to be trained in this area. Thus we have to invest in people ourselves. Once the electronics sector has people who add value, we may experience very rapid development. At the same time, technology is also developing fast and companies in this sector have to keep up with it in order to avoid difficulties.

## What is éolane and how much remains from the former Elcoteq in Tallinn?

The traditions of Elcoteq signify trustworthiness for the customers of éolane. We have over 200 employees. If we were a separate company, we would not be secure enough for our clients. The economy fluctuates but companies have to be financially strong and sustainable.
Elcoteq has also given us the competence. It has raised very many employees for other companies in the sector over many years.

Even during the hard times, Elcoteq managed to run a profitable factory in Tallinn. It was because of this that éolane was interested in the Tallinn factory in the first place.

## What are you producing and for whom?

I cannot reveal the names of our clients. We produce mostly telecommunication equipment, not network appliances, but terminals. This means mobile telephones, not for private users, but rather for special services. Most of the production goes to Finland or elsewhere via Finland. Through the éolane network we also get customers from Europe, but their share is not significant yet. Furthermore éolane has factories in France, Tunisia, Morocco and China, and these cover the rest of Europe. We are the only representatives of éolane in northern Europe. Russia is potentially an interesting market but we are not rushing into it as it is not our first priority.

## Is your emphasis more on being sub-contractors or engineers?

Our strategy foresees increase in our engineering activity. But before this can happen, the factory in Tallinn needs to find its feet again – to develop a good level of production activity and a customer base.

## During the financial boom, Estonia was a great electronics country. How hard was the fall?

Until 2008 we experienced strong growth. This was not due to the boom, but to the fact that companies here got new sales through transfers of products from mother companies. There was a decline in the electronics industry – cuts of 10-20 per cent – but not in specific sectors like industrial electronics or medical electronics. This allowed us to survive the hard times relatively well. The decline was not as big in the electronics industry as it was, for example, in construction.

At the same time, investment continued also when things were hard. There were of course cuts, but preparations had already been made for the new growth which we are now experiencing. It is impossible to suggest that we halt all investment in the electronics sector now, as this is how you miss the boat. There are opportunities during the hard times. Customers start to look around to see whether they can get something cheaper from subcontractors. In order to be prepared, subcontractors have to either develop their competence or employ new technology.

## How large is the share of the electronics industry in Estonian economy?

The added value of the sector is not big for Estonia. Human resources is a problem area. Estonian politicians tend to announce that we need bigger added value in our economy. But who should we achieve it with? One needs to go through certain stages of development. A university education is not sufficient without practical experience. One needs to move gradually from simpler tasks to more complex ones.

## To what extent did the rapid growth in wages during the boom hinder the competitiveness of the electronics industry?

It was certainly felt. But regardless of that fact, Estonia still remains more affordable than Western Europe or Scandinavia where salaries and other costs are concerned. If we manage to develop our competence as fast as it is growing now, if we find better cooperation models with educational institutions, our electronics sector will have great future potential.

## Why should a foreign electronics company bring its production to Estonia or start producing products with higher added value here?

We already have quite a few international electronics companies here. There is strong competence and this is mostly due to the era of Elcoteq.

The second reason is our business culture. Thanks to our proximity to Scandinavia and Finland, it is simple to do business with us. We are good at foreign languages and we keep our promises. In terms of human resources, the wishes and needs of employers have developed faster than the whole educational infrastructure. The technological development has been so fast that educational institutions are simply lagging behind. It is of course also true that employers cannot always predict where the market is developing.

We have to remember in Estonia that we are a very small country. If someone wanted to start production here with 2-3,000 employees, we would not be able to meet this demand for engineering skills. At least our northern neighbours can supply us with those people who have been released from Nokia.

## How many Nokia engineers could find jobs in Estonia?

I cannot speculate, but the situation in Finland definitely promotes the creation of new start-ups, which in turn may bring new opportunities to Estonian subcontractors. I am optimistic and see a future in this sector. We will remain a cheaper place to operate than our northern neighbours for some time to come. If they provide us with the product development and engineering resources, then we will continue to keep up with them and learn from them, until one day we will be able to make our own products with great engineers.

## What opportunities have Estonian electronics companies yet to use to their full potential?

These are written down in our strategy, but we would not want to give tips to our competitors!

Broadly speaking, the niche for Estonian companies could be quality products lying somewhere between the volume of mass production in Asia and the smaller volumes produced in Western Europe (1-100 a year). At such production levels, Estonian subcontractors can be successful.

## How far up the value chain can we move within 10-15 years?

Currently over 10,000 people are employed in the electronics sector and I think if we also count the production of electrical equipment, this level will remain constant. But the share of automated work will grow.

Therefore there will not be a great leap in employment rates, but there will be increased demands for staff qualifications. The added value for which a company can charge a higher price lies in the technicians who can handle fine machinery. As qualifications get stronger, the complexity of products also increases. In the future we will have more say in product design and offering complete packages to clients, with help of networks such as the éolane Group.

## How much will the share of electronics grow in the Estonian economy?

Currently it makes up 25 per cent of exports, 10 per cent of processing industry employment and 3 per cent of added value. This already large figure is set to grow but it will not exceed 20 per cent. The development in human competence will not follow as fast. Electronics companies, just as with IT companies, will offer much more work but there is still a shortage of engineers in Estonia.

## What motivates you?

Changes and developments, which create new challenges for me, for my team, and for the firm in general, motivate me. It would be sad if nothing ever changed. Not a single day is boring here, there are always surprises. Usually there is no situation where everything in production runs smoothly. Every now and then there comes an extra order from a customer, or a cancellation – in both cases this means a lot of running around in order to make things work flexibly and with the least possible damage.

# Production of electronics- and electrical appliances in Estonia

The production of electronics- and electrical appliances has been one of the most rapidly growing industrial branches in Estonia. According to the Union of Estonian Electronics Companies, the companies working in the sector have more than doubled their sales profits in the last five years. Employment is also up by a fifth within the same period. The sector is strongly orientated towards foreign markets; most larger companies are based on foreign capital. Approximately 170 companies are active in this area. The sector is characterised by geographical concentration around Tallinn and its vicinity and also impacts strongly on regional development. The electronics industry has been one of the biggest creators of new jobs in Tallinn, Saaremaa, Pärnu, Sindi, Elva and Koeru.

The production of electronics- and electrical appliances is divided into two sub-branches. In the production of computer-, electronics and optical appliances, the company with the biggest sales profits is Ericsson Estonia (producer of mobile communication network appliances), Enics Eesti (electronic parts for industrial- and medical equipment), éolane Tallinn (telecoms equipment), Scanfil (telecoms equipment) with the largest producer of computers being AS Ordi. In contrast with the general trend of the sector, computer sales are mostly orientated towards the Estonian market. Stoneridge Electronics is a leading supplier to the automotive, truck, bus and off-road markets (telematic systems, driver information systems, and tachographs through electronic control modules).

In the production of electricity appliances, the company with the largest sales profits is ABB, which deals with the production of distribution equipment and electric current generators. Other large companies include Konesko (electric motors and equipment), Ensto Ensek (electricity distribution equipment and control systems and Draka Keila Cables, a sister company to Harju Elekter (cables). Skeleton Technologies is a manufacturer and developer of high energy and power density ultracapacitors.

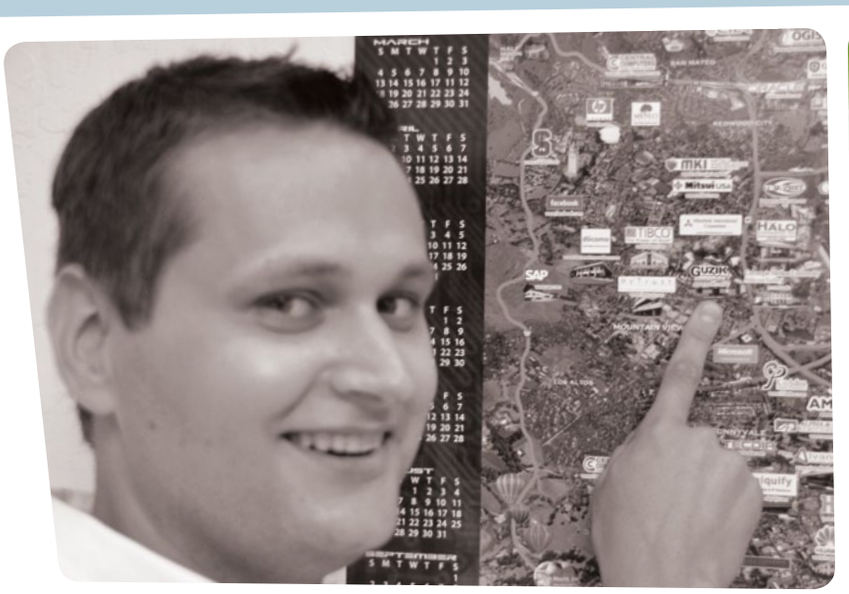
In 2010, the sharp growth in foreign demand created another rapid development phase in the production of electronics and electrical equipment. Due to bigger orders coming in, many companies are expanding their production and employing new staff. Bringing new products with added value to the market helps to increase productivity in the sector.

**THE REAL AMERICAN DREAM:**
**how the small town techie, Lauri Viitas (30) became a director at Guzik Technical Enterprises in Mountain View, California USA and how he recently turned down a job offer from Facebook and started working on his own endeavour instead.**


Text and photos: Toivo Tänavsuu

# Lauri Viitas –

## from Pärnu Cell Phone Hacker to American Technology Businessman




In 1995 Pärnu, a resort town in south-east Estonia, a young teen named Lauri Viitas should be attending his middle school classes, but he is nowhere to be found. Acquiring the name "Moon eclipse" by his fellow classmates and teachers he is too busy with his own business to attend the required classes.

From a family of doctors, Lauri early on in his life chose electronics as his path, instead of medicine. He would often skip classes and do what he believed was better use of his time. From a young age, he was fascinated by electronics. The little engineer disassembled all of his toys, including broken stereo cassette players and loudspeakers. He unscrewed each piece in order to understand how they worked together and looked for ways to improve their functions. He often burned himself while soldering chips on printed circuit boards (as the latter were not easily attainable in Estonia, he ordered them as evaluation samples from the United States). He once repaired a broken color TV, by removing modules and running some bridges, to bypass failed components. He was not properly taught, but mostly imagined how current, voltage and resistance interact with each other and by method of experimentation.

"My friends used to call me born inside the wires," says Viitas. "For my sixth birthday, I had asked my mom for a soldering iron with a fine conical tip, because the surface mount electronic components were getting smaller and it was becoming quite tough to solder them with a large Soviet era iron." As years went by, Viitas struggled through high school, barely graduating. His worst subject was Estonian language and particularly grammar. His teacher threatened to make him repeat the school year if his grades did not improve. "I didn't like high school because it didn't empower me to develop my interests and skills. Everyone had to be an equal achiever," recalls Viitas.

## The first steps in the "business world"

Those hobbies that he loved as a young child would soon make a larger impact on his future, than any of his studies alone. In the mid-1990's, as modern cellular phones began appearing on the market, Viitas quickly took advantage of it and found ways to hack them. The 14-year-old opened his own business, where people would bring piles of phones needing to be cracked, reprogrammed or repaired. Whenever his skills were lacking, he found ways around them with the help from his friends in Tallinn and Tartu. Quickly, a whole network of phone crackers developed in Estonia.

Amongst Viitas' clients were crooks, who wanted to unlock the stolen phones, and policemen who needed access to the data from the phones of those same criminals.
"It was a big business, which kept me busy for many years," admits Viitas. "Back then there was no legislation prohibiting tinkering and jail breaking of phones." At the peak of the business, he used to crack a hundred phones a day, earning three times more in a day than a regular worker did in a month. Among other things, he used to install fancy custom ringtones onto older popular Nokia phones. Hard to believe now, but back then people were willing to pay generously for this service.

But the schoolboy's business would come to an end in 2000, when he graduated high school and shortly after moved to the United States. A year later the police had opened an inquiry into his old business: Lauri's SIM card was found to have been in a stolen phone and he was to show up for questioning. Neither Viitas nor the current State Prosecutor's Office knows what happened to that investigation. Until now the powers of the state have not come to search for Viitas in the United States. It may be assumed that the investigation has been called off as, according to judicial records, Viitas' background is clean.

## Classic example of the American dream

After coming to America, Viitas attended Lincoln University, on the eastern shore of the San Francisco Bay. He quickly started working in the school's library and became known to be able to fix anything and was hired into the school's IT lab. Soon he was leading the computer lab with more than 100 PC-s.

Before graduating with 3.86 grade point average and object-oriented programming degree, he was offered an internship opportunity at the technology company Guzik Technical Enterprises in Silicon Valley. For decades Guzik had been in the business of making test and measurement equipment for hard disk drive component manufacturers.

"While I was interviewing at Guzik, the VP of engineering had told me, that they couldn't even offer me the internship position, because I did not know anything about electronics.
He did however send me home to read the thousand page book *The Art of Electronics* and had asked me to come back in a month, hoping not to see me again. So I slept with this book under my pillow for a month and when I returned to Guzik to interview again, I told him I wanted to learn everything there was to know about electronics," recalls Viitas.

Viitas exemplified the climbing of the career ladder in the Land of Opportunity.
After reluctantly being taken in, the Estonian showed his craftsmanship with the soldering iron (thanks to his childhood experiences), and would soon begin questioning the companies design and production practices, by asking uncomfortable questions while exposing flaws in processes. "Why do the contract manufacturers deliver defective printed circuit board assemblies? Why is engineering not listening to those vendors? Why doesn't anyone notice, that the boss' Mercedes has a flat tire in front of the building?

The young man's first destructive short-circuiting and burning of the printed circuit board assemblies was mostly praised by his boss: "Good job, it means we have to re-design and improve the protection circuits." It took years to redesign and streamline all of the circuits and processes.

"But in general, I did whatever was needed at the moment. From packing finished products in shipping to sweeping the floors, it didn't matter to me. When I lacked the knowledge, I learned" says Viitas. It took 6 years for the young Estonian to rise from an intern to the Director of Production of the whole company.


Now, Viitas is eagerly managing Guzik Test and Measurement, the division of Guzik Technical Enterprises which provides solutions to the general purpose test and measurement industry. They have developed a high frequency digitizer, which is attracting interest in the United States, Asia, and Europe. This recording device, with the price tag of $69,000 USD, takes a high frequency signal and turns it into a digital one. The device can be used anywhere you need to record, analyse and offload digitized waveforms. For example, you can connect the module to a telescope in order to record a high frequency signal from space. Amongst others, physicists are currently evaluating the device in their labs of the Large Hadron Collider - CERN: the European Organization for Nuclear Research, in Switzerland.

If the venture proves successful, this whole division is to become a completely separate start-up company!

"America is the land of opportunity and this is why I came here. I am still doing what I was doing in Pärnu but the scope is a bit larger," smiles Viitas. Although these days he now works with more complicated electronic devices, cellular phones are still special to him – he is constantly testing and evaluating new custom ROMs for his rooted Android phone.

## There are too many business managers and too few engineers in the world

Nowadays, everyone wants to become a millionaire by creating "apps", and start-up companies are mushrooming in America and all over the world. Viitas admits that it is sometimes difficult to live in Silicon Valley as the place is crawling with multimillionaire his age. But the profession of hardware engineering is not as popular, as one cannot really ride the wave into wealth in this field.
"There are too many business managers and too few engineers in the world. People, learn math, physics, electronics and coding! You don't need a business degree, ability to do business comes automatically, and you won't need to study that separately," implies Viitas.
The fact that the well-known web and mobile service E-kaart.ee is based on the program Viitas wrote himself, while studying at the university, is evidence that he also has skills in programming.

As always, the young man is hungry for gaining more knowledge and is currently enrolled in the Master's degree program in Engineering Management and Leadership at the University of Santa Clara. His professors are mostly managers of large corporations. "Although my boss at Guzik thinks that studying management is a waste of my time, and that he doesn't need 'another idiot from school', I have learned terminology in use in large corporations and that knowledge has helped me to go further."

## Too young to rest on his laurels

Recently, Viitas met one of the top executives of Facebook, who offered him a job in the cult company. When the Facebooker in his 30's, declared that since the company was about to go IPO, his job was done and that he could now rest on his laurels as a millionaire, Viitas had to turn down the tempting offer. "It was a hard call, going to work for someone, who said he was done. While I was aware that my 77-year-old boss at Guzik was far from having completed his life mission; he is constantly coming up with new innovative hardware solutions and works every Saturday to not miss out!" Lauri's ambitions are to continue his boss' legacy, innovate, create new hardware products, and build a family one day.

*A shorter version of the story was first printed in the weekly Eesti Ekspress*


# Viewfinder by "Kinotehnik" Turns Photo Camera into Film Camera

Text: Mirko Ojakivi, HEI
Photos: Leonid Nikolajev, LCDFV

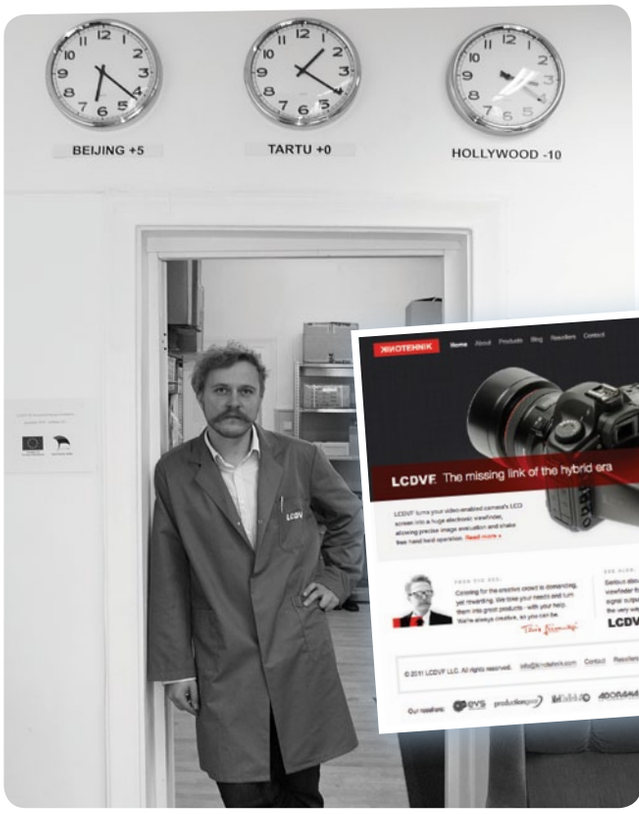
Making movies with photo cameras has been possible for years. In the main they have been low quality, suitable only for home viewing. A film produced in this way was not really suitable for movie screens or television, mostly because the images were out of focus, an insignificant detail was sharp or totally unnecessary things had been captured on film. Today the situation has changed, as a viewfinder produced in Tartu has provided photo cameras with the missing link. The accessory is sold for about a hundred euros in every properly equipped photo store, not only in Estonia but also in Australia, the United States and Argentina, to name a few countries. There are only a few countries in the world where the viewfinder produced in Tartu is unavailable.

Whereas Estonian photography specialists refer to the product, sold under the brand "Kinotehnik", as a cone or viewfinder, the rest of the world knows it as LCDVF (Liquid Crystal Display View Finder). In film circles, the acronym has become a word in itself, which is why the US Patent Board asked the owner of the company, Tõnis Liivamägi, to change the brand.

Like with most inventions, chance and good fortune have played a role in the birth story of LCDVF, but the success of the product is based on hard work and technical know-how. LCDVF was born in Tartu at the end of 2008, beginning of 2009. By then, photographers had already benefited from film-making possibilities provided by digital single-lens reflex (DSLR) cameras.

Filming, however, was not very user-friendly, as it was difficult to tell on the three-inch LCD screen what exactly was being filmed and what the focus was on. The film quality of the Canon DSLR camera was comparable to the professional 35-millimetre film camera. This was already significant, but in addition to problems with managing the optics, filming with the photo camera was problematic due to very low-quality sound recording.

In Tartu, they decided to fix the problem with the optics. "I had some optical equipment at home which was not being used," says Liivamägi. "I thought I'd try to mount it onto my camera and it functioned. I achieved what I wanted and saw what I wanted to film."




The prototype of the product, which is now earning considerable turnover in international markets, was in fact born in a moment. Indeed, the first prototype could not really be called a product. Instead of plastic, Liivamägi used cardboard in creating the prototype, but the most important part of the product – the optics – was in place.

A number of problems had to be solved in order to take the product to shops. For example, the viewfinder had to be somehow mounted on the camera. There are probably not that many people out there who would be willing to attach a screw bought from a building shop onto a camera for which they had paid a thousand euros. Similarly, the possibility that the viewfinder would in some other ways damage the photo cameras could not be risked. The solution was found in glue and a magnet.

Tõnis Liivamägi knows from experience that when you develop a product you don't have to think of every solution yourself. It may seem funny, but the people who helped him with advice in online forums were actually part of the birth story of LCDVF. "I tested my ideas on them and got some good feedback," says Liivamägi. Today, his former advisers are his customers.

In the early days, Liivamägi's business was hanging onto the edge of a precipice. One failure in product development and it would have all gone over the edge. Namely, LCDVF was taking new product orders before it was in the mature phase of industrial development. The first three hundred plastic cones of the viewfinder were handmade by Liivamägi. It was however immediately clear that a handmade product would not suffice. Nonetheless, the company sent out those products which today are considered valuable rarities on the market, and also charged for them. Together with the handmade products, letters were sent out promising to send an industrially produced product later. Liivamägi kept his promise.

Before he created the viewfinder, Liivamägi dreamt of being able to film with the cinematographic language of the 35mm camera familiar from cinema screens. However, for regular users a professional camera was a luxury. He tried to create a cinema image out of the video camera as early as 2005. He had the idea of providing all film enthusiasts with access to an adapter which would enable them to mount cinema and photo lenses in front of ordinary video cameras. Liivamägi began to make and sell such adapters, but this business failed.

"There would have been buyers, but as an Estonian I could not directly sell my product," Liivamägi says, summing up the reasons for failure. Most of the developed world uses PayPal electronic payment services in e-trade. Paypal is equally trusted by Americans and Germans. When an online shop does not accept that payment method, it loses most of its customers even before it begins. The alternative is a direct sales network, but that means using greedy intermediates.

Actually, most Estonian producers still have to use this method, as PayPal still does not support Estonian businesses. At least the experience with LCDVF demonstrates that an Estonian business may open a PayPal account and acquire sales profits, but transferring that money to the company's accounts is still impossible. "We are able to transfer this money onto the company's credit card, but you cannot pay wages or order materials with a credit card," explains Liivamägi.


If the company could sell its products with PayPal, it would significantly raise turnover. At the moment, LCDVF has to use intermediates to sell its products, and they ask for nearly half the product price for their services. "It is the difference between a turnover of ten million or twenty million, says Liivamägi.

To date, more than 16,000 LCDVF viewfinders have been sold. This is a huge number and, for example, Liivamägi's twin brother Tarmo did not believe in 2009 that the product would turn out to be that successful. Tarmo, who has a degree in engineering, predicted that perhaps a thousand products would be sold.


LCDVF turns your video-enabled camera's LCD screen into a huge electronic viewfinder, allowing precise image evaluation and shake free hand held operation.

## LCDVF

**Founded:** 2009
**Owners:** Tõnis and Tarmo Liivamägi
**Awards:** Developer of the Year from Enterprise Estonia
candidate for European Business Award 2011
Best Entrepreneur in Tartu 2010
**Users:** BBC cameraman and film-maker Stephen Brooks
Charles W. Kennedy, personal photographer
of the US President
**Staff:** 7

Tõnis Liivamägi believes that one of the reasons for his success is the fact that he gave out dozens of product samples to the opinion leaders of the photo and film world for free. As the product is of high quality and the Chinese and other competitors have not been able to copy it yet, it is still experiencing success in sales. "There have been many attempts to reproduce our product, but fortunately all have failed so far," adds Liivamägi.

The office, production unit and creative team of LCDVF are still located in Tartu in a modest wooden building. The office still sends out dozens of samples every day. Profits should be increasing, but this is not the case, as most of the profits have been reinvested.

Last September, the new generation viewfinder was launched at IBC 2011. The electronic viewfinder turns the camera into a professional, convenient filming gear. „After the success with our non-electronic viewfinder LCDVF, we identified a clear market demand to develop a reliable electronic system in addition to it, closely following the same principles that have proven to be crucial to the film-makers community: unparalleled design and usability, excellent feature set, durability and last but not least -- justified pricing", said Tõnis Liivamägi, the CEO and founder of Kinotehnik.

The next generation viewfinder LCDVFe is a universal electronic viewfinder for any camera which has a standard HDMI signal output. Compared to the LCDVF, it is more expensive, costing around a thousand euros. It is meant for people whose daily business is in the film industry. Or is it? Whereas the cheaper viewfinder fits only the more expensive range of DSLRs with three-inch LCD screens, the new one can be fitted onto cheaper cameras, costing around a couple of hundred euros. In terms of picture quality, the new viewfinder of the Liivamägi brothers will make the camera of an average film enthusiast just as good as a professional film camera costing between 30,000-100,000 euros.
"It is like a tiny but very powerful computer, which analyses the sharpness and exposure time of the picture. You can now hold or mount the camera in the very way you want. You can really see whether you're in or out of focus. It will be equally at home on a Sony F3, RED Dpic, or on a DSLR. There are few features worth highlighting once again as they were underlined by many: ultra-fast startup (0.8 seconds), no latency (always less than 2 frames), very good battery life (up to 6 hours), one hand operation (no camera crew required to open the flip for example), automatic suspend and wake on camera signal, to name but a few. It is the dream of every cameraman, as the screen shows everything a cameraman needs!" says Liivamägi.

The whole development process of the new product has taken place in Estonia and it will also be produced in Estonia, just like its cheaper predecessor. The main sales argument is once more the price-to-quality ratio. An equally good product from Sony costs 10,000 euros.


"Experienced cameramen who have tested our new product are left with huge smiles, as they immediately recognise a good viewfinder," confirms Liivamägi. "Sometimes they have had the chance to test such a product, but they haven't been able to afford to buy one, as cameras with such a viewfinder usually cost tens of thousands if not hundreds of thousands of dollars."

Tõnis Liivamägi confirms that he is already thinking of the next product idea. He says that he does not plan to quit until he has got his small foot in the large film industry. Liivamägi dreams of producing made-to-order film technology and also props. For instance, if a Caterpillar tractor with a jet ignition engine is needed at a film set, he would be able to create an authentic look for the screen.

In 1938, the Estonian entrepreneur J. Laan founded a motorized bicycle manufacturer in the capital city of Tallinn, and called it Renard Cycles. Renard is French for 'fox', and a fox's head formed the original Renard logo. But, in March 1944, the factory was hit by a bomb and was completely destroyed. The emerging Estonian motorcycle industry became nothing more than a memory. In 2008, a group of Estonian entrepreneurs, designers and racing engineers joined forces to revive the Renard brand. In April 2010, the first 'modern' prototype was unveiled at the Hanover Technology Fair – the Renard Grand Tourer.

# Renard GT:


# Estonians Beat the Iron Curtain into Carbon Fibre

**Andres Uibomäe and his business partner Kaarel Kivikangur had a dream, a dream to build a motorcycle that would make an art gallery proud but would ride like the best grand tourers out there..**

Text: Lauri Põldre
Photos: Jarek Jõepera and Kalle Veesaar

## How big is your team and what is your background?

**Andres Uibomäe (A.U.):** The Renard Motorcycles development team includes Kaarel Kivikangur, Kaido Karjus, Mait Mahlapuu, Karl-Eerik Unt, Ando Paapstel, Siim West and me. I was educated as an industrial designer, but motorcycles have been my big passion for as long as I can remember. During my teen years, all I did was ride and repair motorcycles. I have owned about 15 different motorcycles and modifications. I can't even remember all my motorcycles, although most of them were of Russian origin. Every time, it was the same story: rebuilding, modifying and tuning.

So the background behind Renard is passion from one side, and a designer with creative ambition but no outlet. Somebody once said that four wheels move your body but two wheels move your soul.

## When did you start with the Renard project?

**A.U:** I stumbled upon Renard trails accidentally, seven years ago, when talking to a motorcycle restorer who had been investigating Renard history. Renard is a beautiful name, and I am happy that such an old motorcycle industry legacy is available for us to continue. Due to the Soviet occupation, most historic ties have been broken. If we had not restored the legacy, then most probably the next generation would not have remembered Renard anymore. I hope that we are worthy of the name, and that the new company can last for longer than the old company lasted before WWII. The modern company, Renard Ltd, was established in June 2008.


Kaarel Kivikangur (left) and Andres Uibomäe, engineers behind Renard

## The specifications

Engine Type: V2 90° Moto Guzzi "Quattrovalvole"
Displacement: 1326 cc
Engine Management System: Magnetti Marelli

## Carbon fiber/Kevlar monocoque chassis

| | |
|---|---|
| Wheelbase: | 1450 mm |
| Trail: | 98 mm |
| Steering angle: | 23,5° |
| Front suspension: | 2-way adjustable Öhlins S36DR1L |
| Rear suspension: | 3-way adjustable Öhlins TTX 36 |
| Front/Rear brakes: | Twin semifloating discs Ø 320 mm; six piston monoblock calipers/Single semi floating disc Ø 220 mm; four piston monoblock caliper |
| Front/rear rims: | Carbon fibre 3.50 x 17" / 5.50 x 17" |
| Front/rear tires: | 120/70 ZR17 / 190/55 ZR17 |
| Lenght: | 2100 mm |
| Width: | 840mm |
| Height: | 990 mm |
| Seat height: | 830 mm |
| Dry weight: | 170 kg |
| Fuel tank capacity: | 16 l |
| Top speed: | 230 km/h |

## Did you just want to design an awesome bike, or did you have any other goals too?

**A.U:** For me, it was essential – in addition to a great design – that you are also able to have a good ride. Lots of our partners and collaborators have expressed their opinion that there is no difference what engine or suspension you use, and that people will buy the motorcycle just for its design. I absolutely understand them, but it is not the right viewpoint in my opinion.

For me, it is important how the motorcycle rides: the sense of control, dynamics, endurance, performance and other characteristics. Building moto-sculptures is not exactly my cup of tea. But our major underlying goal is to restore the Renard brand. Renard Motorcycles is a brand whose products are distinguished by strong individuality, intelligent design and immaculate craftsmanship. Our intention is to create something more than a bike. Our goal is to create the ultimate motorcycle.

## How different is the result from your original vision?

**A.U:** Since our initial idea was to build monocoque motorcycles, it has remained practically the same. Possibly it has changed in small details, but it is marginal.

## How will the production model differ from the concept?

**A.U:** We've developed both technical capabilities and also user friendliness for the motorcycle. The serial model is 15 kg lighter than the prototype. In some parts, steel has been replaced with titanium; CNC milled parts are lighter than in the prototype. In important hubs, we have improved technical solutions and durability. Everything that contributes to the identity and shape of Renard, we try to keep as clean as possible. New models must carry the same Renard visual characteristics and concepts as are exhibited by the current GT model.

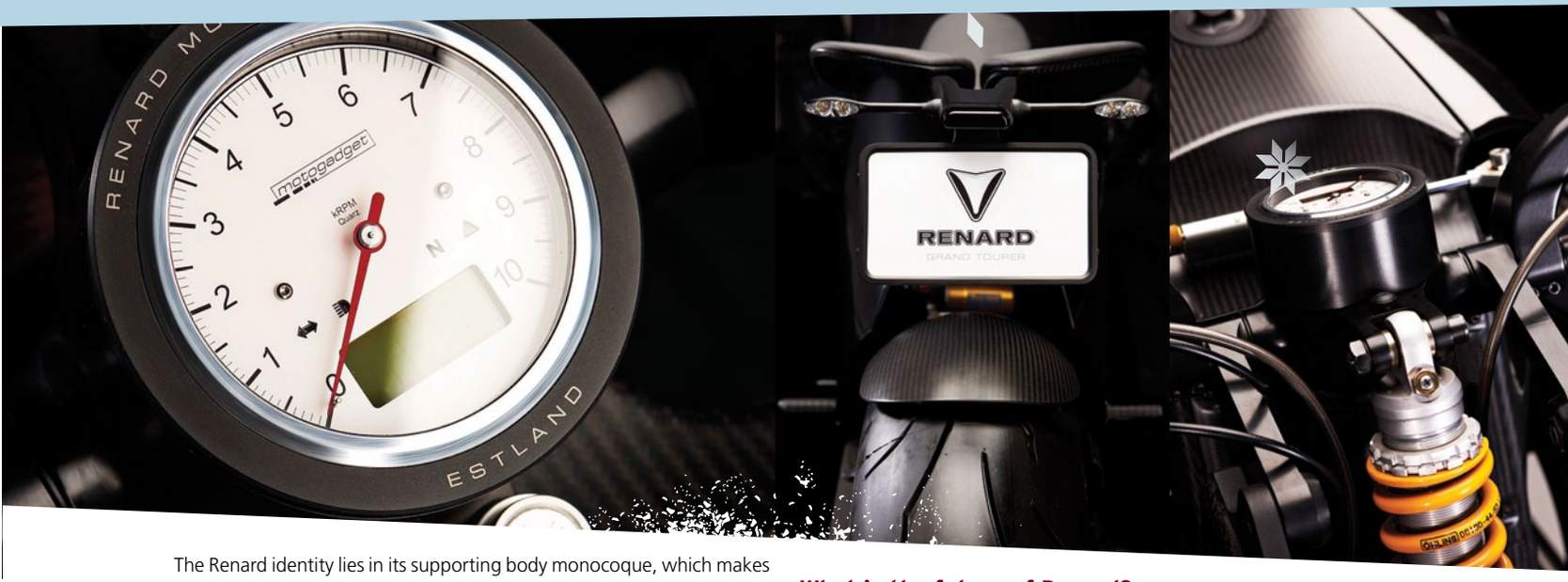
## What has been the response from the world?

**A.U:** In terms of the design and shape of the motorcycle, it has been surprisingly positive. When it comes to brand and product, then it is too early to say; we still have to prove that we are a sustainable company. Everything else will follow.

## Is the design original or were you looking at other brands and models for inspiration?

**A.U:** I can't say that motorcycles with outstanding designs haven't played an important part in the birth of Renard, but engineering solutions are no less important for inspiration.

The design is inspired by motorcycles from the middle of last century: for example, the 1949 Majorca Moto Major 350, 1953 Killinger and Freund, 1934 BMW R7 and 1949 IZH 350 (which is, incidentally, the motorcycle of my childhood). The Renard GT has been compared with the Confederate Wraith, but mainly through the similar design of the first wheel suspension, which also originated from the 30s of the last century, when a similar solution was used by a large proportion of manufacturers.




The Renard identity lies in its supporting body monocoque, which makes our motorcycle's design unique and distinctive. The Renard GT combines classical but also somewhat retro lines, and presents a modern, simple and clear logical form through its ultramodern use of materials. The engineering was done by Ando Paapstel and myself; freehand forms were done by Siim West and Mait Mahlapuu.

## What is it that makes Renard so special?

**A.U:** In technological terms, the most special aspect is the supporting body; there's nothing else like it in the whole world. This is underlined by the fact that when we started searching for partners who would produce the body for serial production, we could not find any companies that were willing to do it. We received only three replies to fifteen enquiries!

## What was the biggest challenge in designing and building this motorcycle?

**A.U:** To maintain the desired production and sale price. Even if you make an exclusive product, such as a carbon fibre monocoque motorcycle, you have to remain within a reasonable price range. The biggest challenge was to achieve the desired price level without having to compromise the quality.

## What is the future of Renard? How many units do you plan to manufacture?

**A.U:** Our hope is to make 50 units per year over five years. If we manage to achieve this, based on one GT model, then we will be very, very satisfied. In five years' time, we want the Renard brand to be known within its market segment, and to be in a position where customers trust us based on the quality of our products and how they endure over time.

## Where will Renard be positioned in the world?

**A.U:** The Renard GT is positioned in a small production series, high-priced motorcycle class. At the moment we are acquiring a small series VIN code, which will be issued to manufacturers that make up to 200 units per year. So it is exclusive enough if we look at the production capacity, and ultra-exclusive if you look at the country it comes from. Our competitors are chopper builders, but in particular we want to share market with Vyrus, Confederate, NCR and Wakan.

**The exhibition "Tracing Bosch and Bruegel – Four paintings magnified" will be on show at the National Gallery of Denmark in Copenhagen until 26 August, 2012 and after that in Glasgow, Scotland in autumn 2012.**

Tallinn

# 500-Year-Old Detective Story

**An international technical art history project initiated in Estonia has revealed the secrets of four identical paintings previously attributed to Hieronymus Bosch and Pieter Bruegel**

Text: Mihkel Kärmas

In October 2011, four remarkable paintings were brought together in the Kadriorg Art Museum for the first and, most likely, the last time ever. All four paintings arrived in Tallinn from art collections located in different parts of Europe – in Spain, in Scotland, in Denmark and in Estonia. The connection between those four works of art was for a long time unknown, yet they depict the identical Biblical scene of Christ casting out the moneylenders from the temple.

The paintings are full of mysterious detail, frightening characters, and esoteric symbols, but it is clear that the works had to have a common role model. To add to the intrigue, the paintings were earlier linked to two famous painters from the Low Countries: Hieronymus Bosch (the Scottish painting even carries his signature) and Pieter Bruegel the Elder (the Danish painting). Who is the real artist of these 500-year-old paintings? What accounts for their identical nature? Are they originals or copies? The project, which lasted for three years, searched for these answers with the help of the most state of the art technological know-how.

"It's utterly fascinating to compare a number of paintings that look so alike but yet so different. By looking at them with different techniques and studying them in close detail, discussing the results between art historians, scientists and conservators, you begin to get a feeling of who is behind these individual paintings," says one of the leading researchers of the project, Dr. Jørgen Wadum from the National Gallery of Denmark.

Technical art history is a new and exciting approach which combines art historical and conservation research with scientific analysis. Earlier technical research had been carried out with single pieces of art, but the ambitious attempt to study four paintings in parallel was totally new. The more remarkable is the fact that this idea was born in Tallinn.

## Four footprints of one painting

For years, one of the most valuable old masterpieces in the Kadriorg Art Museum had been 'Christ casting out the merchants and moneylenders from the temple'. However, the artist and the origins of the painting were unclear.

In 2001, by coincidence it turned out that another painting which looked identical was housed in the Danish National Gallery. The excitement grew as it was discovered that the Tallinn and Danish versions of the historical scene of 'the moneylenders' were not the only ones in existence.

"We knew that there was a third similar version in Glasgow and we had heard something about the fourth painting in a private collection in Spain," says Kadi Polli, Director of the Kadriorg Art Museum.

Thanks to the Estonian initiative and the benevolence of the owners of the paintings, a research project came to life in 2008 which brought together professionals from four institutions in three European countries: The Kadriorg Art Museum, Tallinn, Estonia; The National Gallery of Denmark, Copenhagen; The University of Glasgow in collaboration with Glasgowlife (the Glasgow Museums and Art Gallery), Scotland. Furthermore, the private owner of the painting in Spain participated in the project, but wishes to remain anonymous. "We wanted to know when the paintings were created and what their temporal correlation with one another was. The second big question and hope was that one of the works was directly from the studio of Hieronymus Bosch or Pieter Bruegel. In addition we wondered whether one of the four paintings had been a prototype for the other three," says Kadi Polli.

In addition to historical truth, this was also a question of fame and finances, as the research results could have demonstrated that some of the paintings were less valuable than the others.

## A joint research protocol

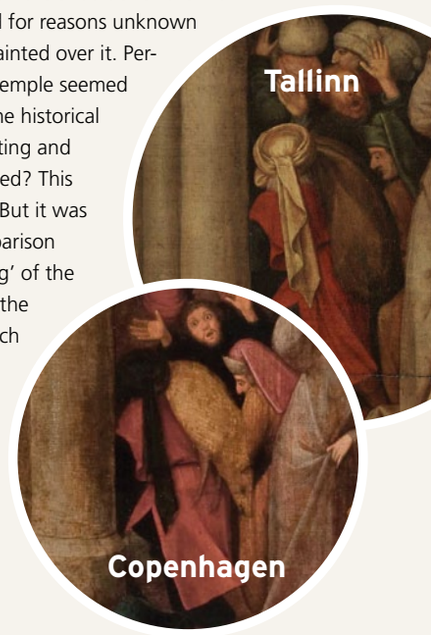
As each painting was at first investigated in its home country, a precise research plan was agreed upon.


"We created sort of a protocol trying to do the same thing with each painting," explains conservator and art historian of Glasgow University Dr. Erma Hermens.

The first step was to compare each tiny detail of the paintings with the help of a magnifying glass. For example, the motif with the doctor who is extracting a tooth, looks at first identical in all paintings, but it varies in its detail – on the Glasgow painting the doctor has two pairs of spectacles and a snake on the desk, the painting in the private collection has three pairs and some other assisting equipment. It is also noticeable that the colours of some significant details do not match.

Next the teams went further with X-radiography and infra-red imaging. "With the infrared camera we can see entire underdrawing and all the areas where black has been used. That is the opposite to an X-ray, where you can primarily see all areas where white has been used. So combining these two will give us a lot of new information about how the paint layer has been built up," explains Jørgen Wadum, Head of Conservation of the National Gallery of Denmark.

The infra-red imaging technique revealed many details invisible to the naked eye. For example, on the Tallinn painting the original version had a pig on the shoulder of the man next to Christ, and for reasons unknown a sack has been painted over it. Perhaps a pig at the temple seemed inappropriate to the historical owner of the painting and they had it repainted? This is just guesswork. But it was precisely the comparison of the 'handwriting' of the underdrawings of the four paintings which made it clear that they could not have originated with one and the same painter.




In the next stage miniscule samples were taken from each painting. In addition to electron microscopy, they were analysed with powerful spectrometers which identify the fine details of colour pigments, binders and fillers and determine their chemical components. The results showed that all the paintings were done in the 16th century in Antwerp in present-day Belgium

## The code hidden in the wood

As a result, after the first three research phases it became clear that all paintings originated from the same period and location, but that each painting had a distinct artist.

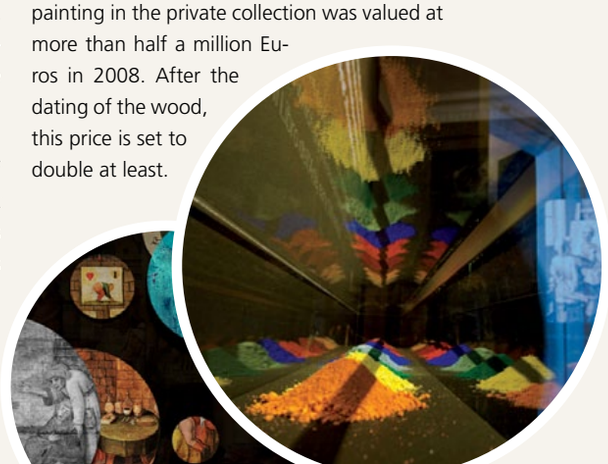
Now there was the opportunity to find out even more. Since the paintings were painted, not on canvas, but on an oak surface, they could use dendrochronology – identifying the age of the work from the wood substrate.

The only dendrologist in Estonia who dates artwork, Alar Läänelaid, explains that this is not simply about reading growth rings, but it is also important to measure their width. It is known that the growth rings depend on weather conditions at the time – ideal growing conditions produce wide growth rings, while poor growing conditions produce narrower rings. The pattern formed by tree rings of varying thickness is therefore typical for a certain period. According to Läänelaid, it is most difficult to distinguish growth rings on wood which is centuries old. Even a mistake of a millimetre can lead to flawed results.

Measuring the growth rings provides a sequence of numbers which can be compared with historical reference lines. Läänelaid has compiled such reference lines of Estonian wood dating back a thousand years, and researchers elsewhere have done similar work. This characteristic pattern enables us to identify not only how old the wood is, but also were it used to grow.

In the Low Countries, where there was lack of natural resources but great demands for art works, wood for panel painting supports was imported, mainly from the Baltic region. In this way it was established that all four paintings were created on wood which was called Baltic oak and which came from Eastern Poland. The dating of the wood provided the biggest surprise. Whilst on superficial observation, the Glasgow painting seemed to be the oldest of the four and the painting in the private collection suspiciously new, the results provided by dendrochronology in fact turned this theory upside down.

It turned out that the painting in the private collection was the oldest of them all. The wood dated back to the late 1520s, which is nearly fifty years older than the Glasgow painting. The wood of the Copenhagen and Tallinn paintings dates back to around 1560. This turned the financial worth of the paintings on its head. Whereas the museum paintings do not carry a pricetag, it is known that the painting in the private collection was valued at more than half a million Euros in 2008. After the dating of the wood, this price is set to double at least.




## Historical forgery and phantom copies

The process also revealed why the painting in Glasgow seemed so old. The chemical analysis showed that its paints included ash, which led scientists to conclude that people were knowingly trying to make this painting look older than it was. As the painting also carries the signature of Hieronymus Bosch, professionals conclude that it is a copy made in late 16th century which has been presented as an original. "This is not necesesarily a bad thing but shows how popular Bosch used to be at that time," explains Kadi Polli.

Therefore the conclusions drawn by this research, which lasted for three years, are that one of the four paintings is a 430-year old copy and the other three are "phantom" copies dating back to mid-16th century – they are copies of a more famous work, possibly by Bosch, the original of which has gone missing.

"We think there must have been one original composition that has then been used in various workshops – copied and used in workshops for the paintings. Was the original by either Bosch or Bruegel – that's still the question," says Wadum. "But it is likely that we will forever be looking for this original. It is probably a painting which has been destroyed, or a phantom Bosch, as we call it," adds Polli.

Whilst this sounds like a disappointing result for such a grand project, participants claim that the project has provided a lot of useful information.

"We are getting a much greater and more nuanced picture of that whole period, where replicating, variations and copying the paintings was a fashion and was a very traditional manner of making appreciated compositions become known to a wider audience" says Wadum. "Connoisseurship on its own is very valuable but I think even the most hard-lined connoisseurs today will realize that working together with the scientists has had huge benefits for everybody."

The project was made public last autumn when, about 490 years after they were born, the similar paintings came together in Tallinn at the exhibition "Tracing Bosch and Bruegel – Four paintings magnified", which opened in the end of October.

From Tallinn the exhibition travelled on to Copenhagen where it remains open until 26 August 2012 and from there it will travel to Glasgow. Unfortunately the valuable paintings themselves are not travelling with the exhibition.

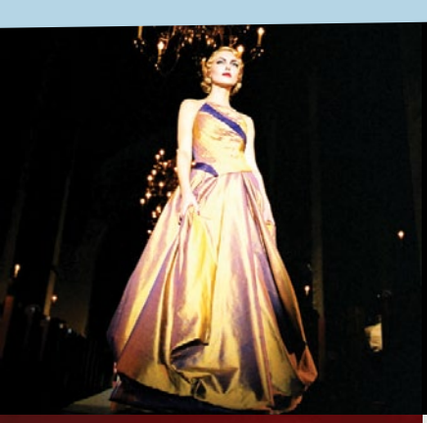

The know-how gained in the project will be used in the next grand international research project which will focus on the original works of Hieronymus Bosch, or at least on works which have been considered originals until now...

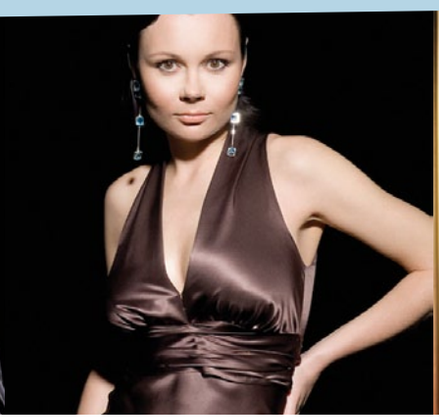
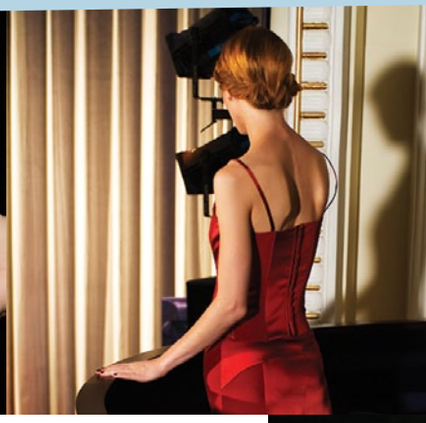
**Katrin Kuldma** has studied fashion design in both Estonia and in the United States. She has worked in the New York Fashion District and with various Estonian fashion labels and has owned her own fashion studio since 1993. Katrin Kuldma is co-author of the book "Stiilist" (*About Style – ed.*) and won the reputable Estonian Kuldnõel (*Golden Needle – ed.*) fashion award in 2006. She founded the luxury brand Amanjeda in 2008.

# Katrin Kuldma: From a Small Design Studio to the High Tech Amanjeda Luxury Brand

Text: Mervi Lill
Photos: Olga Makina

**Entering the Amanjeda Studio which is owned by one of the most well-known Estonian fashion designers, Katrin Kuldma, feels like stepping into a cosy but magic world where luxurious elegance meets boho-chic. This is also the signature note of Amanjeda collections, which combine local and international inspiration sources with innovation and tradition. Katrin uses the best fabrics available to create her collections, blending the skills of local craftsmen with the most up-to-date software and sewing technologies.**





Katrin Kuldma opened her first studio in the middle of the 1990s as a fresh graduate from the Estonian Academy of Arts.

"Estonian arts- and design education has always been of a high quality. Tallinn Fashion House and the former magazine 'Silhouette' used to be trendsetters in the Soviet Union and a window on the West. I have also studied in the United States and in comparison I consider the strengths of Estonian arts education to be creativity and the promotion of conceptual thinking," says Katrin.

"The naivety in youth is such a driving force," Katrin is convinced. "The will and courage to start my own business and to organise grand fashion shows was certainly based on overconfidence, as when I first started I didn't really even know what VAT was," laughs Katrin, when recalling the early days in the business.

In her small studio based in Kalamaja in Tallinn, she created custom-made orders both for friends and for fashion walkways. Soon Katrin was headhunted for the position of Head Designer at the Tallinn Fashion House. In the following year she had already acquired the special orders unit of the fashion house and this is how a glamorous fashion house was born. Soon her clients included Estonian celebrities, and luxurious evening gowns and collections for grand fashion shows became every day business.

The most memorable show staged by the Katrin Kuldma Fashion House was undoubtedly the one which took place in the Niguliste Church back in September 1998, where around hundred evening gowns and suits were shown off by famous and glamorous beauties.

"This was a movie-like experience, seeing the original idea on paper become a complete visual performance with its own environment, lighting and music," recalls Katrin fondly. At all the biggest shows put on by Katrin, the music has been created by Villu Veski, one of the most famous jazz musicians in Estonia.

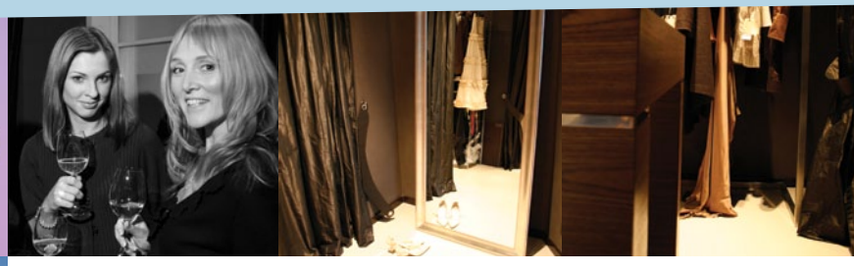
"Another movie-like experience was the competition to create the costumes for the Eurovision Song Contest that took place in Estonia in 2002," continues Katrin. "The dress patterns took their direction from the whole concept of the show, also taking into account how they would look on the television screen and the wishes of the stars themselves. The Ice Dress created for the presenter Anneli Peebo, a well-known opera singer in Europe, was perhaps the dress above all the other dresses which I have created. The Nordic ice pattern was hand-drawn on to the paper patterns of the dress and then scanned and transferred onto fabric in a printing house. The white printed lines were later covered in pearls. This handmade job alone took three months," recalls Katrin about the challenge.

In parallel with high fashion, Katrin continued to be active in the industrial design landscape, working as Head Designer in the Development Team at Sangar, which produces men's shirts and jeans.

When she was offered the opportunity to become Head Designer at the Klementi Sewing Factory and PTA in 2002, Katrin closed the doors of her own fashion house, took along some key colleagues and made the plunge into the clothing industry.

"Of course I was sad to close this chapter, but I could not see a new development level for a fashion house specialising in high-quality handmade private orders. Creating collections for fashion brands, and developing retail concepts was exciting and challenging," Katrin says, recalling the reasons making that decision.

Five years ago when Katrin Kuldma left her job as Head Designer at Klementi, she once again chose to become a businesswoman.



"It is less stable and more complicated to be an entrepreneur, but at the same time also more creative and interesting," she sums up. Katrin decided to start a fashion label which was small and effective in both content and form. She was the first designer in Estonia, not to mention Northern Europe, to start using special software dedicated to made-to-measure clothes.

After several years of investment, training and endless testing she has now reached the stage where creating exact patterns on the basis of the measurements from the customer is a question of seconds. The modern pattern construction software enables her to focus on design and leave the boring bits for the computer. "For example, a classic male suit consists of about 60 main- and additional material patterns. Making amendments by hand for a specific customer takes days, but the software reduces this process down to a couple of seconds," explains Kuldma.

Every fashion designer is familiar with the nuisance of recurring flaws: a crease here, a fold there, fittings and corrections. Yet it is possible to construct perfectly fitting items of clothing for each and every person. As a rule, in the life-cycle of designing a piece of clothing, the most time-consuming part which has the highest degree of responsibility is the preparation of a perfect pattern. A good result can be reached with hand-made paper patterns but digital ones allow continuous improvement upon the design.

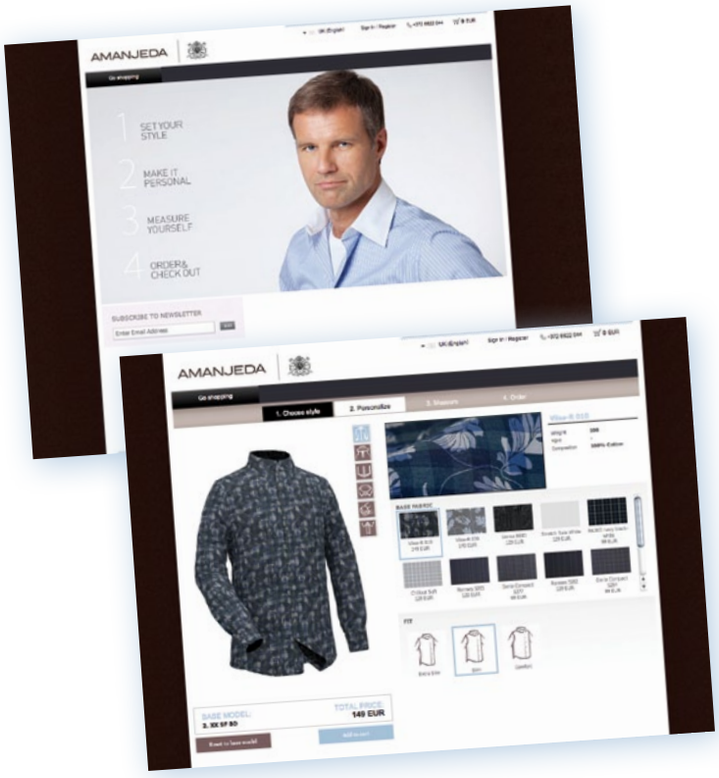
Whereas Katrin Kuldma was earlier mainly known for her luxurious evening gowns, more and more of her customers today are men.

"Today we have reached the stage with Amanjeda made-to-measure clothes, where perfectly fitting suits and shirts for men and coats, suits and dresses for women are created daily in our studios on Adamsoni street," says the successful fashion designer.

## Amanjeda online boutique of made-to-measure shirts – three steps to your favourite shirt

It was exactly two years ago when the proposal to open the online shop for made-to-measure clothes for men was made to Katrin by her current partners.

"We opened the online store in April 2012 and today there are about a hundred happy clients out there with shirts which have been made exactly according to their shapes and wishes. The online shop is the most democratic way for our brand to reach our customers as national borders are irrelevant and it is also the most comfortable way for the customer to get his favourite shirt," Katrin says with confidence.



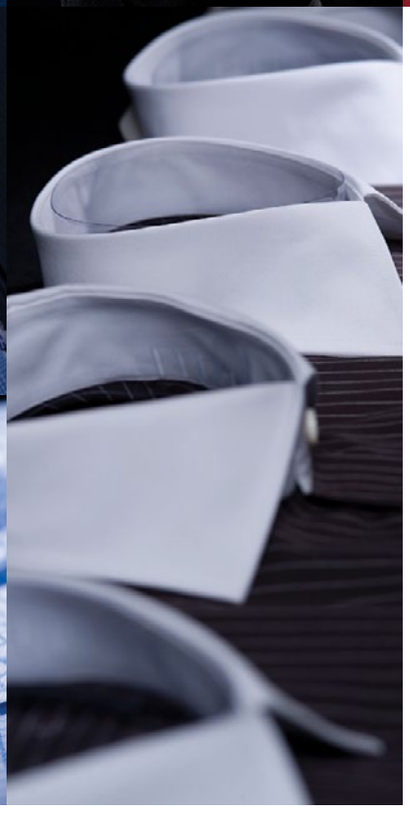
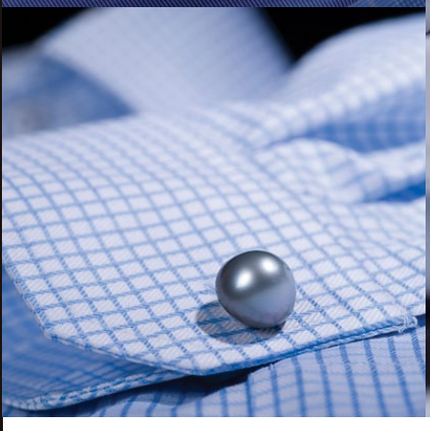

"The online shop and made-to-measure clothes are today for a mainstay of the brand; laptops and smart-phones are part of our daily business. It is important to focus on the kind of service we offer. Our desire is to offer the best emotions, when the customer buys and wears our product. The buying process has to be comfortable and playful and the shirt has to become nothing less than the client's favourite shirt. Thanks to the Internet and social media platforms, the world today is more democratic. For us, national borders do not exist; the purchasing decisions made by the retail industry and agents do not influence the web boutiques of brands," Katrin says, explaining her concept.

**>> page 59**

# PORTFOLIO_**KATRIN KULDMA**






"Amanjeda is a traveller through dreams, who is inspired by the world," says Katrin. "Aman is a mythical blessed land and Amanjeda is a traveller in this land, a connoisseur of beauty and design, who chooses the best – discreet luxury."

Amanjeda's clothes have become favourites with representatives from different fields. "Our clients, or Amanjedas as we like to call them, include architects, actors, singers, lawyers, politicians and businessmen. There are no age limits among our customers. We are linked by our similar attitude to the aesthetics and functionality of design, to the high quality of materials and production," sums up Katrin about her latest undertaking.

"Amanjeda's online boutique is unique in its structure – we aim to put the client into a similar situation as if he or she were in the studio, we recommend different models and fabrics, explain what materials and details work well together, and the 3D shirt model helps to visualise the whole combination process in a playful way. We want the best for our clients – we would rather be small but excellent in our approach. This is why we also call ourselves Amanjeda online boutique. We are planning to expand the offer of available models to suit jackets and coats and also designs for women," says Katrin about the latest developments.

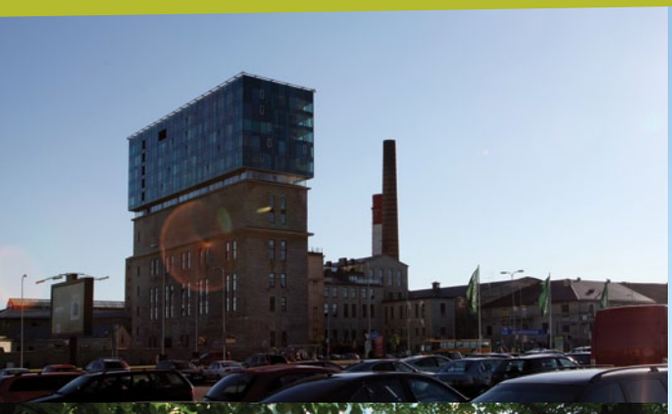
In order to differentiate oneself from the competition, it is not necessary to create crazy fashion lines, believes Katrin. "In today's dizzying world, we lack clarity and simplicity, dedication and thoroughness," she says. "You need to do what you consider to be right. As a designer I have gone my own way; I am confidently offering top quality. I am doing what I like and what I believe in. When you enjoy your work and your life you create a snowball effect: this satisfaction spreads to the people you work with and for."

Text: Michael Haagensen
Photos: KOKO, Maritime Museum

# KOKO`s Tallinn

## An interview with Andrus Kõresaar

**Having seen the seaplane hangars at the Maritime Museum a number of times prior to their renovation and having missed out on seeing the television tower before it closed in 2006 for not meeting fire safety standards, it is exciting to see that both of these renovation projects reached completion this spring amid glowing reports of their success. What better time to look more carefully at them and get the inside story from the architects responsible for much of the exciting new buildings currently putting Tallinn on the architectural map.**



Tallinn synagogue (2007)

The Fahle House (2006)

Rottermanni Carpenter's Workshop (2008)

I have to start by confessing I had not seen either of these in their finished form, and since I had just injured my back and was immobile, I couldn't view them before my scheduled interview with the owner of KOKO Architects (the bureau behind both projects) – Andrus Kõresaar. So in a sense I went to speak to him blind. Like most of the readers of this magazine, I had not seen the work and I knew very little about the bureau, but by the end of the process not only had my eyes been opened (and so will yours if you decide at this point to read on), but what I saw and heard was clearly impressive.

I arranged the interview for the first day I felt my back could manage the short trip up Tartu Road to the Fahle House, where KOKO Architects have their open plan multilevel office. Andres greeted me, we went upstairs to a meeting room positioned in the middle of their expansive office space, and I asked him about KOKO Architects.

**Andrus Kõresaar:** Koko is an innovative architecture company, it is 12 years old and it is actually quite difficult to describe the style of what we do because all our projects are so different. In some sense our bureau is like a chameleon; we enter the environment or the typology of the task or the actual city planning problem, but each time there is something similar – our approach or how we think.

We have done a synagogue (only one in Estonia), a lot of spa hotels, industrial conversions like the Fahle House here and in the Rottermani quarter, and reconstructions of medieval buildings like the Great Guild Hall in the old town.

## So looking at your most recent projects, the seaplane hangars and the television tower, I understand these came to you through competitions.

**AK:** The seaplane hangars competition was in 2009.

## Right, so that was right there in the financial crisis. Did that complicate things at all?

**AK:** No, it meant that the outcome was a jackpot for the Maritime Museum. Because from the start it was financed by the EU, but the first plan for the museum was to renovate the hangars and keep them as an un-heated building with simple exhibits like the submarine and canons and so on. Quite quickly we realized that if we want to show something involving electronics, we have to heat the building throughout the winter as well. The second thing is that if you don't heat the building, then the visiting season is limited to summer, which is quite short. So we decided to go on to heat the building. So this meant the isolation of the shells against the outside, and we also then realized that we can't heat the building using the city's central heating because later it would be too expensive for the Maritime Museum. And so we developed a version of a sea heating system. We got the know-how from Norway and this is now the first heating system of its kind in Estonia.

## OK, so, I understand it is possible to use temperature bridges and heat pumps to help maintain temperatures indoors, but I mean, the sea gets cold in winter!

**AK:** Yeah, it doesn't matter because we can get out the warmth from the sea. If the sea is 1.5 degrees centigrade, we can take 1 degree from the water and heat the hangars to plus 17 degrees using this 1 degree from the water. But in reality we believe the sea will never be so cold because in the last 20 or 30 years it has never been colder than plus 4 degrees. So we are prepared for much colder winters as well.

And what I meant by saying this was a jackpot, was that the financial cost involved was the same. So the Maritime Museum had made a budget projection before the crisis, and during the crisis we worked out that we could include more in our solution without extra funding. So we could isolate the hangars, we could include electronic exhibition technology all for the same money partly because of the crisis.

## Wasn't the project meant to open for the Capital of Culture in 2011?

**AK:** Yep, that was the big idea, but as the work got under way we understood that meeting that deadline was not the most important thing – the reconstruction and renovation of the building was more important than speeding things up to meet this deadline. We understood that the concrete shells were on the point of collapse, physically, and it was so serious that using Tallinn 2011 was not important anymore. Because if one of the shells had collapsed, we wouldn't have had any clue how to fix it – it would take a long time and much more money.

## I have heard of many similar shells that have collapsed. These were built in...

**AK:** 1916 and it is the mother and father of all similar concrete shells in the world.

## Right, so how did this one last so long?

**AK:** It was made from very good concrete. But chemical processes had changed the structure and so we had a dangerous situation. And the steel reinforcement inside was starting to appear through the under surface of the shells and it was very rusty. The engineer, professor Karl Õiger said that there is no physical explanation for why it holds, so it is just holding from its construction memory. So that was the starting point of the reconstruction.

## So how did you save it? I mean it's like a disaster waiting to happen, isn't it?

**AK:** Yeah, and even the colleagues of professor Õiger in Helsinki said that you cannot save it – it's not possible to renovate it. In 2009, Õiger was 83 years old, and for him it was also like his life's work, and even he said, "I would give up".

So the first thing we did was install full scaffolding under the shells to take the load of the shells from the structure and to protect them. And we started renovating the surface a square metre at a time, taking one square metre in one corner and the next in the opposite corner so that we did not overload the structure as we progressed. First, all the exposed steel was cleaned with high-pressure water and coated with

rust protector, then we added some new steel and new concrete – very strong concrete from a Swiss engineering company, which was sprayed to a thickness of 5 centimetres. And the existing shell is 6–8 centimetres thick so the whole thing is like, paper thin.

## Do you remember the first time you saw the hangars? Were you already then looking at it as a potential project?

No, we just went there on an excursion to have a look. Because we do this around the city, we go to different places as architectural landscapes just to keep our minds ticking and in tune with what is around us. So we just went there to have a look, we were familiar with it as a miracle of construction and we tried to imagine how it was when it was used for seaplanes.

## What was the most interesting thing about this project for you, and why should people go and see it?

**AK:** The building itself is so surprising. And how we did the exhibition is also unusual, I would say. I don't want to just say it is fantastic and too many good words about our work. But I am very satisfied with how we have handled the complexity of the whole thing, with the way the huge doors open outside and all the multimedia we have used and the simulators in the seaplane complex.

## Lastly, where did the idea come from the huge doors on the sides?

**AK:** The idea came from two things, first, the fact that in the museum we need a dark atmosphere to control the lighting for all the exhibits and the multimedia involved. We need different lighting for boats, for cannons and even for the simulators. And secondly we wanted to honour the beauty of the hangars themselves, and to do this we made it possible for two of the four external walls of the building to completely open. So once every hour the doors open and light floods into the building. This means the magic and theatre of the museum displays disappears but the building itself is completely revealed. And the reason we wanted to use these huge doors is to remind visitors that the building was once used as a hangar for planes and hangars have these huge doors.

## Now let me ask you about the Television Tower. Did that happen around the same period as the seaplane harbour?

**AK:** The time difference was about half a year but they actually opened within a month of each other. The reason was that both of these are tourist attractions and they had to open at the beginning of the season.

## Tell me about what you have done to the television tower because it was just a Soviet built communications tower.

**AK:** It was designed in 1972 by Georgian architect David Basiladze, who made many TV towers in the Soviet period. It is basically a Soviet factory chimney with a visitor's platform. The tower has been closed since 2006 because of fire safety issues, and during the reconstruction we had to resolve these problems: we changed the sprinkler systems, we painted all the stairwells with fireproof paint, we made an evacuation chamber, and also as the broadcasting technology has changed so much, we could completely gut one of the two floors removing all the technology, so now there is a restaurant/café on the 22nd floor and the observation deck and exhibition on the 21st.

## What is in the exhibition?

**AK:** There are 22 robots with screens presenting different topics. There are topics like Louis Kahn, Arvo Pärt, the development of ME-3 bacteria, a new defence system and so on. Lots of different topics.


## You call these things robots. Are they stationary or do they actually move around?

**AK:** They are fixed but they move towards you when you approach them and when you leave them they go back to their sleeping position. Sometimes they also dance and they are lit from inside and each one has its own dance.

The biggest change is the entrance area. The entrance to the TV tower was quite closed, it had an entrance building where you had to show your passport, then you had a covered entrance to the TV tower itself and basically you couldn't see the TV tower during your visit. You didn't see how high it was or how massive and we changed this completely. We made a huge ramp up to the building and also a tunnel for access during the winter, because there are still some antennas on top of the tower and they collect ice and then pieces of ice can fall. The tunnel also has a glass ceiling, you can see through it and see how big the tower is and how it looks.

## When it closed in 2006, I remember that there was a sudden interest in going to see it in its Soviet decor one last time. Have you retained anything of the Soviet decor?

**AK:** Yes, the floors, they are the original concrete floors and there are some texts in metal cut in to the concrete. So it refers back to the original tower. We built our new interior in harmony with the existing floors and let's say in regard to the shape of the building, we also followed the old division of the window frames with the new windows.

Text: Michael Haagensen
Photos: Kaido Haagen, KOKO, Maritime Museum, Tallinn TV Tower

# A Museum To Put Tallinn On The Map

**I first saw the seaplane hangars when I took my kids to see the marine vessels moored in the harbour back in 2006 or 2007, and I remember then how the sheer size and beauty of these essentially industrial structures took my breath away.**

So, more than five years later, I was now walking through those familiar gates again, and the first thing I noticed was that some of the grim Soviet and pre-Soviet industrial buildings surrounding the site had not changed at all. But it was soon quite a different experience as I walked through the minimalist landscaping that led to the main entrance. Inside I was instantly aware I was entering a crafted environment. The colour scheme was blue like I was entering an aquarium. The ticket sellers were enthusiastic and helpful, and we were soon on our way with smart tickets in our pockets up a large set of stairs that took us into the museum.

The Seaplane Harbour and the seaplane hangars, which are 50x100 metres in size, were built during the Czarist era in 1916–1917 as a part of the naval bastion of Peter the Great. They were meant to house the largest seaplanes of the time. The hangars were built and designed by the Danish company Christiani & Nielsen.

In November 1918, a wreckage of an abandoned German seaplane, *Friedrichshafen FF 41 A* was found in the hangars. The remains of the plane were used when building the first plane of the Estonian Air Force.

When WWI broke out, the building of the hangars came to a halt. But by the mid-1920s the whole harbour, with buildings and hangars, was completed.

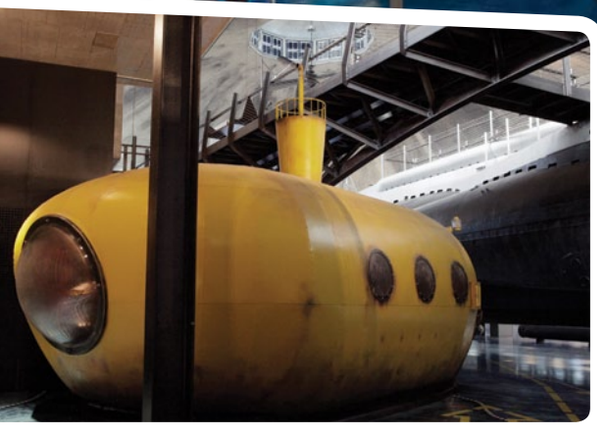
The Estonian Naval Air Brigade was formed on 5 July 1932 and had at its disposal four Hawker Harts and two Avro 626 seaplanes. That year, the premises of the hangars received a complete overhaul. The area was also known as the Small Mine Port. It was a well-maintained area, with some sports facilities, including a small stadium, tennis courts, firing range and a bathing area. Estonian pilots were well known for their interest in sports.

On 29 September 1933 Charles Lindbergh, who was the first to fly across the Atlantic, landed his seaplane called Lockheed Sirius at the hangars.

In the summer of 1940, at the beginning of the Soviet occupation, the area was expropriated to serve the military needs of the Soviet Army.

In 2006, the Maritime Museum won ownership of the buildings after a nine-year court battle. The decaying hangars were rescued from a bankrupt company, which had owned them illegally.

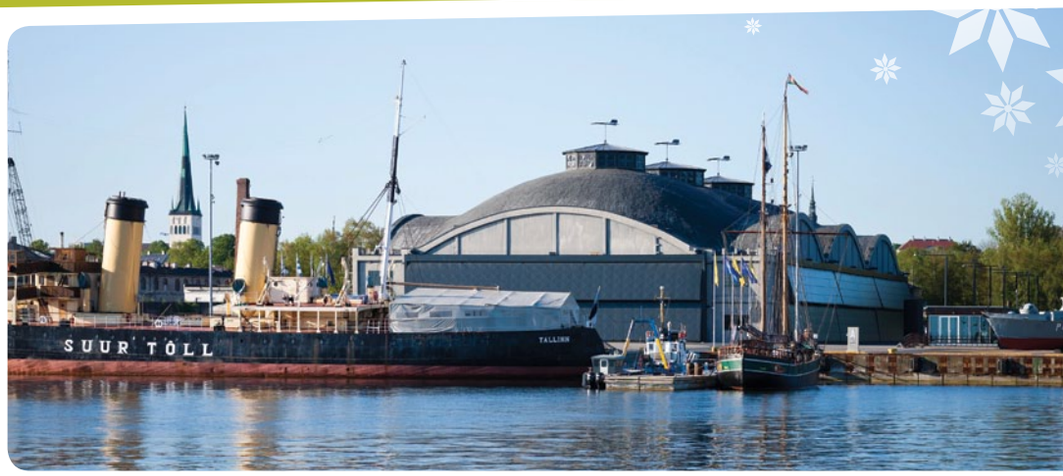
Tallinn Seaplane Hangars were opened to the public on 12 May 2012. During the first day, about 4,000 people visited the new attraction and during the first month, the number of visitors reached 45,000 which is 3 per cent of the whole population of Estonia.



Once inside, I was relieved to see that the hangars themselves had been restored so that their original raw industrial beauty and grandeur had been left to speak for itself. It was still a huge space under three very large concrete domes, and although there was clearly a lot going on in the space, nothing could detract from the impact of the building itself.

Visitors are directed along a raised walkway that meanders through the space rising and falling gently as it goes. The first exhibits present a history of boating in Estonia from simple traditional craft built for fishing to dinghies and yachts for racing on water and ice and finally motorboats and more modern vessels. The walkway by then has reached the far end where it turns across to the other side of the building to run along that wall back towards the entrance again, taking visitors through a broad variety of naval exhibits from past and present on its way. The main attraction along this section being the restored pre-war submarine Lembit, but tanks, guns from naval destroyers, and other examples of naval equipment are also on display.

The majority of the exhibits are suspended on wires from the ceiling and 'float' just below the walkway but several feet above the floor, which is a deep blue and decorated as if we are looking down on navigation charts. The whole effect is rather like we are walking along a jetty looking at the exhibits floating along side. But at intervals along the jetty visitors can take the stairs down to the blue floor and walk about as if they are divers looking up at the hulls and keels and propellers. Special exhibits and display areas also provide detailed information on particular topics, like the history of the building itself and the process of its restoration. At floor level, you can also appreciate the structures that support the walkway above, which are not just functional but display a certain engineering beauty of their own that echoes the forms of the concrete shells above. In this way it slowly becomes apparent that as a museum, the variety of exhibits target different types of visitors and different age groups and the whole experience manages to keep everyone guessing what is coming next.


Clever use of low light conditions selectively highlight the exhibits, while an impressive audioscape creates a distinctly nautical backdrop to the visitor experience. What's more this whole environment is surprisingly relaxing and I shouldn't wonder that even children with a tendency to tantrum in such public spaces would find this a calming space to be in. But it is not a place for slumbering or quietly dropping off on one of the thoughtfully placed benches because just then the lights go out completely and you are treated to an audio-visual display that uses the entire space to present some other spectacle. I won't say too much because part of the success of this museum is the way it keeps you guessing.

I am sure during our visit, which lasted about 90 minutes, we only saw some of what this building and museum has to offer. We knew we would be back with our youngest son later in the summer, so as we made our way to the café, we didn't mind leaving some things for next time. I am already looking forward to it.

The first 50 metres or so of walkway introduce you to the display panels and how you can learn more or less about the exhibits depending on your interest. Most of the exhibition in this section is a walk and look experience. The naval section on the other side of the building is already a little more hands on. Visitors can climb into the guns and feel what it might have been like to operate them in wartime, and you can go down inside the submarine Lembit and see how submariners lived deep beneath the waves. After engaging with the exhibits at that level, down on the floor you are given a new level of experience through simulations and interactive displays. Here you can fly a Sopwith Camel in a hi-tech simulator, navigate real model boats around a scale model of Tallinn Bay, try on naval uniforms from the past and shoot down enemy aircraft.

# New TV Tower To Reach The Sky

TALLINNA TELETORN

**Visiting the Television Tower the next day was an interesting counterpoint to the Maritime Museum. I have driven past the tower countless times over the last decade, and always dismissed it along with its observation deck and restaurant, as just another (in this case Soviet) relic of the 20th century television age.**

But as I walked along the glass-roofed winter access tunnel (the summer entrance was closed while they worked above) flanked by huge photographs of the original construction from the mid 1970s, I was already aware that I was entering another fully considered and crafted environment.

Once inside I could immediately see the touch of the same brush was evident at every turn. This time the interior is essentially white with a 21st century take on retro space age design, so that you could be forgiven for thinking this 1970s Soviet chimney had morphed into part of the set for Kubrick's 2001 – a space odyssey. KOKO's touch is evident even before I get to the ticket desk as I pass an interactive mock news studio where visitors can prepare a news item and record it using a real TV camera and send it YouTube-style to friends and family as a kind of video postcard.

At the ticket desk I was met by the same bright-eyed staff (both museums obviously having gone to the same training sessions) who directed me to the history exhibition and on to the lifts. The lift takes us up to the


observation deck on the 21st floor, and along the way, a video screen shows our progress on a white silhouette of the tower indicating our increasing height in metres and the speed at which the lift is travelling (only 49 seconds to reach to highest viewing platform in Estonia), all with an airy audio soundtrack to takes us up into the sky among the clouds above.

Emerging onto the 21st floor is rather like stepping into the sky. The décor is again predominantly white and since my visit was on a sunny day, the sky and the Finnish Gulf shone with a brilliant blue, but I am sure the effect would still be spectacular even in overcast weather. The observation deck is a simple uncluttered exhibition using animated display modules evenly positioned throughout the space. These modules, referred to as robots, are like a cross between huge fairy mushrooms and the semi-intelligent plant forms from the Day of the Triffids (more sci-fi references). Installed either in the floor or hanging from the ceiling, they rest in a sleeping position like a mushroom until visitors activate them by walking near them or touching their interactive screens. At which they come to life and present their screens as if ready to entertain. The robots towards the main windows present a range of interactive scenarios under four themes. After selecting your preferred language, you can choose history, the seasons, a viewer or the future. History allows you to see reconstructions of what Tallinn looked like hundreds and even thousands of years ago. The seasons show you what the landscape below you looks like at different times of the year. The viewer connects the screen to a series of digital telescopes positioned around the tower so you can scan and zoom in on any part of the view from the tower. In the old days these would have been coin operated telescopes, but this solution is included in the entry price and has no time limit, so you can look as long as you like without any fear that the view will go black as your coins drops through and shuts off the telescope.

The robots further back from the windows present notable Estonian achievements in science and culture, once again through interactive screens so you can explore each topic as briefly or as deeply as you like. There are Estonian inventions like Skype, developments in the field of energy, and presentations about cultural figures like the architect Louis Kahn and the composer Arvo Pärt. Arvo Pärt's robot is one of the few without an interactive touch screen since his robot has headphones so you can hear excerpts of his work and learn about his unique *tintinnabuli* style.

At intervals there are also glass windows with buttons next to them on the floor. A sign next to the button explains that below you there is 170 metres of nothing, and on pushing the button with you foot, the glass goes from frosted to clear revealing just that – a 170-metre drop straight to the ground.

Finally, before taking the lift back down, I take the spiral stairs from the observation deck up to the café and restaurant on the 22nd floor. Here you can enjoy a simple drink and pastry or sit in a full a la carte restaurant for lunch or dinner in the same clean white décor.

After two days immersed in new renovation projects by KOKO Architects, I really felt they had made such a fully crafted and considered contribution not only to the architectural landscape of Tallinn but also for museum goers both visiting and local. But there was something else that was remarkable about these two museum experiences. Not only were they both remarkable architectural reconstructions, not only had they both considered their public so thoroughly and so intelligently and not only had they managed all this with an impressive simplicity and efficiency, but they had done all this without having over-egged the pudding.

Text: Aivar Hanson
Photos: Lauri Laan

# Flavours of Estonia

In 2008, the first top 50 Estonian restaurants list was compiled. There were many surprises, disappointments, and a lot of genuine joy. It was similarly good to hear that the updated list of top restaurants was eagerly awaited.

Fortunately, it can be said that there are many great and unique eating places in Estonia. It is worth making the journey to eat in Estonia, and the number of such visitors is increasing year by year. In addition to the capital, you should consider driving around Estonia and dining in restaurants which are a bit further afield. Your stomach will thank you for it!

As of today, the top 50 restaurants in Estonia have been selected over five consecutive years and every year there have been new interesting places and surprising newcomers. The soul of this undertaking is Aivar Hanson who has also written the surveys for the readers of "Life in Estonia".

This time we have decided to introduce to you five restaurants in Tallinn and five outside the city, based on their innovative use of Estonian ingredients. The other factor we took into consideration was the opportunity to eat outside. The Estonian summer is short and it is wise to make the best of it.

The Top 50 Estonian restaurants can be found at *www.flavoursofestonia.com*. Beginning this year, the selection of the best restaurants is to be carried out in two stages – in spring, the provisional 50 best are listed in alphabetical order, and in October, a complementary evaluation is carried out after which the actual ranking is settled.

If you want to have a say in which is the best eating place in Estonia, go to the website mentioned above and vote - your opinion also matters to us.

The 50 BEST Restaurants

## * Hotel Telegraaf terrace – food and symphony

Vene 9, Tallinn
Tel. +372 600 0600
*www.telegraafhotel.com/est/restoran-tchaikovsky/suveterrass*

Hotel Telegraaf is majestic, but cosy. This quite rare combination applies to the whole hotel complex and to each individual part as well.

Entering the hotel yard terrace from the street, it seems as if you have stepped from one world to another. In the street there was hustle, noise, and rush. On the terrace there is peace, quiet and comfort. The terrace often hosts live music and then the difference between the two worlds seems even greater.

The Tschaikovsky restaurant at the hotel Telegraaf elevates with its dramatic interior, which in turn raises high hopes about the food. And when your order is presented to you with emphatic festivity by a proud waiter with an arrow-like precision … it even exceeds your already soaring expectations.

The terrace menu is simpler and with less pathos, but just as delicious as the restaurant menu. Russian classical cuisine is a staple here. First, the dish is a sight for sore eyes both visually and to the palate as well. The food is made from local fresh and carefully chosen ingredients and prepared with equally the same passion as symphonies are written.

# * Komeet – a comet in the Tallinn sky

Estonia pst. 9, Tallinn
Tel. +372 614 0090

Estonia is situated in the kind of climactic zone that causes architects to contemplate the possibility of a roof terrace very little, if at all, when designing houses. This is why there are only two "sky" restaurants in Tallinn. Komeet (Comet) is one of them. When the weather is fine, it is crowded. But it would be wise to defy the weather even when it is not so clement – the view from the Komeet terrace overweighs the slight discomforts. And if the weather is really rotten, you can stay indoors at the Komeet café anyway.

The inspiration for the café is Anni Arro, a model and a gourmet from a family of artists. People take interest in her activities and rightly so because all her projects enjoy thorough groundwork and that's why she never fails to succeed.

At Komeet, you can enjoy simple local food and cakes that melt in your mouth. It accommodates a lot of people so it is definitely not a place to be "alone with yourself". Better to go there to watch Tallinn's versatile social life and come to realise that Tallinn is also a beautiful city when viewed from above.

# * MEKK – if Estonia had a taste

Suur-Karja 17/19, Tallinn
Tel. +372 680 6688
*www.mekk.ee*

As regards its land area, Estonia is such a small country that there are no unique ingredients, specific to this country only. The origin of our cuisine is rustic. Peasants did heavy physical work all day long and for rehabilitation they needed nutritious food. The energy accumulated from the food was much more important than the flavour.

So far it doesn't sound inviting? But wait! Present day Estonia is an "e-country". For the majority, the toughest physical effort in a day would be a click on a mouse key! But the rather robust flavours we remember from our grandmother's cooking are still in our blood.

And this is the playground of restaurant MEKK and its head chef Rene Uusmees. The dishes are prepared as in old Estonia. Everything is made on site and the ingredient is completely used up – from nose to tail, from stem to blossom. Old recipes are deconstructed like so many Lego bricks and will be reassembled as something totally new and different, preserving a hint of the familiar flavours.

If you want to know what Estonian food tastes like, visit MEKK.

# * OKO – tasty cabin by the sea

Punase laterna 1, Kaberneeme Yachting Harbour
Tel. +372 5300 4440
*www.okoresto.ee*

Estonia is a maritime country. This is easy to see. Just as noticeable is the fact that there are no good seaside restaurants, as there is only one good location for great restaurants – Tallinn centre. But now, good food has found a place in suburbs and in rarer cases also outside the city.

OKO is one of these exceptions. The most natural way to come here is by a sailboat, but if you don't happen to have access to a boat, you can also reach the restaurant by land. The food in OKO is good either way you travel and that is the reason people come here.

As appropriate to a harbour location, the main focus on the menu is on local fish. Grilled, smoked or prepared through much more complicated methods. When you have finished one dish, you will instantly want to taste another until you have exhausted all the dishes on the menu. Naturally, this means several visits to the restaurant, but who could be put off by that? Furthermore, if you really don't want to leave, you can stay the night in the second floor guesthouse.


# * Põhjaka Manor changes our way of thinking

Mäeküla, Paide parish, Järvamaa
Tel. +372 526 7795
Email: pohjaka@pohjaka.ee
*www.pohjaka.ee*

Estonia's middle name could be "Home by Night Country" because Estonia is so small that you can reach home by nightfall from anywhere in the country. That is why roadside diners are often places where you can sate your hunger, without looking for a taste experience.

Or should I say, diners used to be like that. They are not any more. Because now the Põhjaka Manor is open to patrons. Good food is the reason to make a lengthier stop half way on the journey from Tallinn to Tartu.

Põhjaka Manor has been renovated to the extent that it feels comfortable to dine there. Ingredients are bought from near-by producers, and herbs are grown on site. A henhouse will soon be finished. Thanks to this the dishes at Põhjaka taste like "real food".

And you really will reach home by night as Põhjaka Manor is open from noon until 8 p.m. If you want something special, you can book the place in advance for the whole evening – and a memorable evening is thus guaranteed.

# * Leib Resto ja Aed – exemplary grandchildren

Uus 31, Tallinn
Tel. +372 611 9026
*www.leibresto.ee*

The first thing you will notice in restaurant Leib (Bread) is its youthfulness. Among the staff, thirty is already a grand old age. The youngsters listen to the thirty-somethings with respect and the thirty-somethings in turn have respect for our forefathers' legacy. Bread, or to be more precise, rye bread, is synonymous with Estonian food. If there is bread on the table, the table is set.

Believe me, if you were a grandmother or grandfather, you would yearn for grandchildren like these. They are respectful, willing to learn, hardworking and clever. If you are in your twenties, you could describe the restaurant Leib even more briefly – successful.

The new owners took over an eating place that had been vegetating for years and turned it into a lively place from day one. The secret of their success? They make simple food better than anybody else. In the summer months, the tables are taken outdoors into one of the most unique gardens in Tallinn Old Town. And naturally, the setting is modern. Modern restaurants throughout the world utilise their own farmers who grow products especially for them. So does Leib.

# * F-hoone – from old factory building to restaurant!

Telliskivi 60a, Tallinn
Tel. +372 680 1114

The head chef of F-hoone (F-building) Maia Smõslova used to work in one of the most prestigious restaurants in Tallinn – Vertigo. The clients were elegant people who came to show off, the atmosphere was elitist, the champagne flowed and delicacies were served up. But the time for delicacies and exhibitionism came to an end. However, good food is something people will always want to have. Time added only one requirement to this – the food should come with a reasonable price tag.

F-hoone is the antithesis of Vertigo in everything except for the food – it is still delicious, although in a new, simple and even robust way. And the prices! The correlation between price and quality at F-hoone is something the other restaurants have a long way to go to match.

The food is seasonal and healthy. Frying and roasting are unknown techniques in this kitchen. Instead of in a Porsche, the clients arrive by tram or by bicycle although there might still be a few flashier cars for good measure. Good food unites us all despite our different ways of life.

Taking F-hoone as a blueprint, let's turn all old factory buildings into restaurants!

# * Supelsaksad – from a play café to a real café

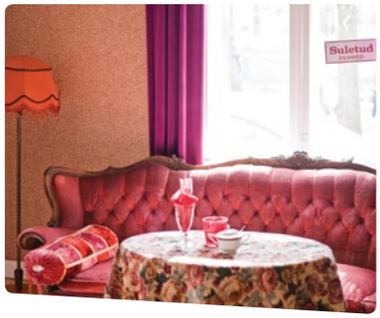
Nikolai 32, Pärnu
Tel. +372 442 2448
*www.supelsaksad.ee*

Little girls like to play shop, or in this case café. One little girl liked it so much that it kept bugging her even into adulthood. For some unknown reason, there are very few classic cafés in Estonia. But when she was a grown-up woman, this girl made her childhood dream come true and from that time on we have had one more good café in Pärnu.

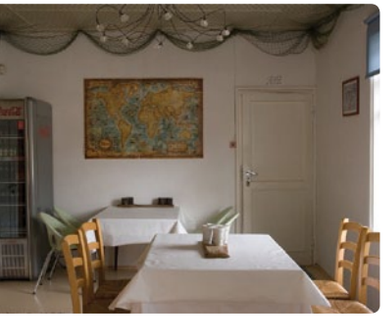
Supelsaksad is in its prime off-tourist season. With its nostalgic background music, time seems to stop. Minutes can easily transform into hours and all unfinished business stays outside the café door waiting obediently for its time, not daring to interrupt.

The most essential ritual in Supelsaksad is to find a cake to go with your coffee. You cannot find the cakes on the menu because the display case is full of different tasty delicacies. So, you have to go and pick your favourite from the vitrine.

Supelsaksad is a café with a timeless atmosphere, but during the summer months you have to bear in mind that good coffee and cakes attract innumerable fans.




It is the triumph of the age-old desire for a colourful and plush world once lost, hiding a frenzied resistance to snobbish modesty and the lack of fantasy in trendiness. The cafe is ruled by its vitality, genuineness, colour and comfort together with the truly scrumptious scent of cardamom rolls.



# * Muhu Kalakohvik - unmissable


58° 36’ 19” N
23° 14’ 17” E
19 m above sea level
Tel. +372 4548 551
*kalakohvik.onepagefree.com*

Did you memorize the address? Was it too complicated? Try this: on the island of Muhu, at Liiva, on the left side of the road when coming from Kuivastu port, look for a white house with a red roof. Actually there is no need to worry – if you are already on Muhu island, Kalakohvik (“the fishcafé”) remains on your way whether you like it or not.

But you’d better like it because here you can try real homemade Muhu food. Naturally, the choice is yours, but there are two “must-have” dishes – fish soup and fish pie. Which type of fish are they made from? The fish that the sea has yielded this particular morning! The small island of Muhu seems much larger due to its food. Here you can find everything – from top gourmet food to local dishes with a twist. You want to know the name of the location? Don’t worry! Just come and you will find us!

# * Tammuri farm – a well-kept secret

Mäha village, Otepää parish, Valgamaa
Tel +372 5358 5140
*www.tammuri.ee*

Tammuri farm, like many great dining places, is not easy to find. The farmhouse is tucked away among the rolling hills of southern Estonia and there is not a single sign directing patrons to it. Despite that fact, not a single visitor has gone permanently missing whilst trying to find it!

Tammuri farm restaurant is a one-man show. Erki Pehk alone carries out all the necessary jobs. He raises, picks and gathers ingredients, prepares the food, acquires the wines, serves and even cleans up. Every evening he receives only one group of people – the minimum number of guests per group that can be served is two and the maximum is twenty.

The menu varies every evening and it is usually agreed beforehand on the phone. It is recommended that you enquire about the self-grown vegetables from the garden belonging to Erki's parents.

There are many such farmhouses in Estonia providing a meal service. But this level of quality cannot be found elsewhere. The food, which is prepared in a modern way, accompanied with carefully selected and often self-made beverages, in the milieu of the old farmhouse, is a unique experience.

As with all good restaurants, bookings need to be made early.

*Flavours of Estonia*

Text: Ene Kaasik, compiler of "Estonia a la carte"

# In praise of Estonian ingredients and cuisine

**Estonian cuisine combines old and simple peasant food with the more sophisticated gastronomy of the manor houses.**

In addition to *sauerkraut* and *kama* (a traditional grain-based drink – ed.), we have a lot of exciting food to offer, which has not been rediscovered yet. "It just shows a lack of imagination when people say that there is nothing to find in the Estonian kitchen", says Angelica Udeküll from the Laulasmaa restaurant. "So much in nature has not been discovered yet: every second plant here is edible."

The best Estonian raw ingredients are growing in the forests, from plants like fireweed, wood sorrel and common sorrel to all sorts of roots. Our forests grow berries, nuts and mushrooms that are especially valued in Europe. Besides chanterelles, we have delectable false-saffron milk caps and ceps. "Just imagine what you have to pay in Italy for a kilogram of mushrooms! It is all just growing here! Or take cloudberries, for example. They are really expensive elsewhere in Europe. When I came to Estonia and saw how many of them you have!" exclaims Nico Lontras from the Vilde restaurant.

Most of our chefs consider Estonian fish to be exquisite, especially when you buy it directly from fishermen. It is also a fact that many chefs love to de-stress by going fishing themselves. Most people mention Baltic herring, which are considered better tasting than sardines. "It is such a delicious fish, especially when fried. Total mystery! Also when you fry a pike-perch, it gets this beautiful golden crusty skin, which should not be hidden under anything," says Tarmo Mölder, Chef de Cuisine at Lucca. European perch, flounder and pike also received a great deal of praise. The only drawback is the fact that fresh fish is not easily attainable and it is quite expensive.

We have large apple orchards and vegetable fields. The potatoes grown in Estonia taste fantastic, as does beetroot. Turnips are another great root vegetable, but unfortunately they have been a bit neglected as a raw ingredient. Pumpkins are wonderful and you can make absolutely anything from them. In addition, many less-known roots grow here: sunroot or the Jerusalem artichoke, for example.

## What is unique in Estonian cuisine?

"Kama" for sure – it is not known elsewhere. And of course our black bread. Typical dishes are also Baltic herring, Estonian potato-barley mash, called mulgipuder, barley groats and blood sausage. Jevgeni Jermoškin from the Ribe restaurant believes that "sült" (jellied meat – ed.) is unique. "When I made 'sült' in Belgium, they had no clue what I was doing."

Estonians love their pork – we just cannot live without it. Sausages, stews, pies, grilled, or fried, in whatever shape or form, pork is the food which especially the older generation doesn't go without. Whereas in the rest of the world people often speak of eating from "nose to the tail" as a new approach to food, this is something that Estonians have always done. We have always used up our ingredients and fortunately these traditions have endured. In this sense, we have many unique foods: pig feet, pig ears and pig tails. Smoked pig ears are a delicacy.

Skilful preservation is also characteristic of Estonian cuisine and picking fruits and mushrooms in the forest is fortunately still popular in Estonia. In this sense, we really are nature's kids. It is wrong to claim that we don't have good raw materials and that Estonian food is boring. There are many good things. We have to make use of all the raw ingredients to be found in our fields, in our gardens, stables, forests and the sea. Local ingredients just need to be handled differently and Estonian cuisine calls for more work and imagination.

# Estonia in brief

| | |
|---|---|
| **Official name:** | Republic of Estonia |
| **State order:** | Parliamentary republic |
| **Area:** | 45,227 sq kilometres (17,500 sq miles) |
| **Population:** | 1,294,236 inhabitants: 67.9% Estonians, 25.6% Russians and 6.5% others |
| **Population density:** | 28.6 people per square kilometre. Over 70% reside in urban centres |
| **Capital:** | Tallinn with 392,331 inhabitants (as of 2011) |
| **Other major towns:** | Tartu (98,514), Narva (65,706), Pärnu (44,437), Kohtla-Järve (41,992) |
| **Administrative divisions:** | 15 counties (*maakond*), divided further into 226 local municipalities, incl 33 towns and 193 rural municipalities (*vald*) |
| **Islands:** | 1521, the biggest being Saaremaa 2,671 sq km, Hiiumaa 989 sq km, and Muhu 198 sq km |
| **Biggest lakes:** | Lake Peipsi 3,555 square km (1,529 sq km belong to Estonia), Lake Võrtsjärv 271 square km |
| **Longest rivers:** | the Võhandu River 162 km, the Pärnu River 144 km, and the Põltsamaa River 135 km |
| **Highest point:** | Suur Munamägi (Great Egg Hill) 318 m |
| **Air temperature:** | annual average +7˚C; January -3.5˚C, July +20.3˚C (2011) |
| **Official language:** | Estonian, a member of the Finno-Ugric group. Russian is widely spoken. Many Estonians speak English, German, and Finnish |
| **Alphabet:** | Latin |
| **Religion:** | Predominantly Protestant (Lutheran) |
| **Currency:** | euro (EUR) |
| **Average salary** (1st quarter of 2012): | 792 EUR |
| **Driving:** | Right hand side of the road. Speed limits in town 50 km/h, out of town 90 km/h.International driving licence required |
| **Weights and measures:** | Metric system |
| **Electricity:** | 220 volts, 50 Hz |
| **Country calling code:** | 372 |
| **National flag:** | Blue-black-and-white |
| **National holiday:** | 24 February (Independence Day) |
| **National anthem:** | *Mu isamaa, mu õnn ja rõõm* (My fatherland, my joy and happiness) |
| **National flower:** | Cornflower (*Centaurea cyanus*) |
| **National bird:** | Chimney swallow (*Hirundo rustica*) |

Member of EU, NATO, OECD, WTO, Schengen area

# Practical information for visitors

For more travel details, please consult the sources below: **www.visitestonia.com** (Estonian Tourist Board), **www.riik.ee/en**. Tourist information centres are located in all larger towns.

The Tallinn Tourist Information Centre in the Old Town is located at 4 Kullassepa Street - no more than 10 steps from the Town Hall Square (ph.: + 372 645 7777, e-mail: **turismiinfo@tallinnlv.ee**). The Tallinn Tourist Information Centre in Viru Keskus (ph: + 372 610 1557, 610 1558), open every day 9 am - 9 pm, is located in the centre of the city. A wide selection of maps, brochures and publications in several languages (largest selection in English) can be found at local bookstores and tourist information centres.

## Visa

As of 21 December 2007, Estonia is a part of the Schengen visa area.

Nationals of EU and EEA member states are free to enter Estonia. The required travel document for entry is a national ID card or passport. Nationals of the following countries do not need visa to enter Estonia, and can stay for up to 90 days in any 6-month period: Andorra, Argentina, Australia, Brazil, Brunei, Canada, Chile, Costa Rica, Croatia, El Salvador, Guatemala, Holy See, Honduras, Hong Kong, Israel, Japan, Macao, Malaysia, Mexico, Monaco, New Zealand, Nicaragua, Panama, Paraguay, San Marino, Singapore, South Korea, USA, Uruguay, Venezuela. The required travel document for entry is a valid passport.

Citizens of countries not mentioned above require a visa to enter Estonia. Visitors arriving in Estonia with visa must have national passports valid at least 3 months after their planned departure from Estonia.

Children aged 7 to 15 years must have their own passport when travelling to Estonia or, if they are registered in their parent's passport, must have their photo next to the name. Children under 7 years need not have a photo if they are registered in their parents' passports. Persons above 15 years must have a separate travel document with photo.

For detailed information on visa requirements and entry rules, please consult the Ministry of Foreign Affairs website at **www.vm.ee/eng**.

## Arrival

**By plane:** Recently renovated, the Tallinn Lennart Meri Airport, just 3 km from the city centre, is welcoming, modern and user-friendly. Among other amenities, travellers have access to a free WiFi area in the transit zone. The airport's 24-hour customer service telephone is +372 6058 888.

Tartu Airport is situated at Ülenurme, near Tartu. Flights from Tartu to Helsinki depart six times a week.

Regional airports are located in Kuressaare (Saaremaa), Kärdla (Hiiumaa), and Pärnu; these provide no regular international connections.

**By ship:** With over 6 million passengers annually, the Port of Tallinn is undoubtedly Estonia's main gateway. Large passenger ferries arrive from and depart for Helsinki and Stockholm regularly. The 85-km Tallinn-Helsinki line is served by ferries that make the journey in 2 hours; hydrofoils and catamarans make the trip on 1.5 hours and operate between April to November-December, depending on weather conditions. Travellers should note that different ferry lines depart from different terminals and harbours. The City Port with its four terminals is a 10-15 minute walk from Tallinn Old Town; the Paldiski-Kapellskär line uses the Port of Paldiski, about 50 km from Tallinn.

**By car:** Border checkpoints greet travellers entering or departing the country by way of the Estonian-Latvian border points at Ikla (the Tallinn-Riga highway) and Valga, as well as on the Estonian-Russian border at Narva (the Tallinn-St. Petersburg highway), Luhamaa, Koidula and Murati. On the Estonian-Russian border, all traffic is subject to border formalities both when entering and leaving Estonia.

**By bus:** Not only is travel by bus the fastest and most convenient mode of international public transportation in the Baltic states, it also offers excellent value for your money. Regular connections service all major cities in the Baltic countries and St. Petersburg. Eurolines Lux Express and Hansabuss offer comfortable Riga Airport transfers from Tallinn, Pärnu, Klaipeda, Vilnius, Panevezys, and Šiauliai. Prices start from €20.00. A useful tip: Regular passenger buses have priority at the border checkpoints, so travel is smooth.

**By train:** There is only one international overnight train to Moscow.

# Customs

We suggest travellers consult with the Estonian Customs Board help desk (ph.: +372 880 0814 or **www.customs.ee**) for details. The limit on import of alcoholic beverages from outside the EU is one litre for beverages over 22% alcohol content, and two litres for beverages up to 22%, and four litres for wine. Import of tobacco and tobacco products from non-EU countries is limited to 40 cigarettes or 100 cigarillos or 50 cigars or 50 g of tobacco products. Counterfeit goods, including pirated CDs, video and audio tapes, are prohibited by law. A special export permit is required for specimens of plants and animals of endangered species, protected species and hunting trophies (please contact the Nature Conservation Department, Ministry of the Environment for details). Articles of cultural value produced in Estonia more than 50 years ago also require special permits (please contact the National Heritage Board).

# Getting Around Estonia

## Inter-city public transportation

Public buses are the easiest, cheapest and most convenient solution for visiting Tartu, Pärnu or any other of the larger towns. Buses from Tallinn to Tartu depart every 15-30 minutes, to Pärnu every hour. On weekdays, seats to these destinations are almost always available even immediately before departure (watch out for special events). For weekend travel or trips to more remote locations with fewer connections, it is advisable to buy tickets in advance. The Tallinn Bus Terminal is located at Lastekodu 46. The timetable is also available online at **www.bussireisid.ee** and ticket information is available at telephone +372 6800 900.

## Travelling by car

Travellers hoping to see more of the country and the rural areas it would be best advised to travel by car. The roads are quite good and traffic is light. Crossing Estonia from north to south or west to east by car takes approximately three to four hours. All major car rental agencies have offices in Tallinn. It is also possible to rent the car in Estonia and drop it off at a rental agency in Latvia or Lithuania, or vice versa. The speed limit in rural areas is 90 km/h and in cities 50 km/h. In some areas the highway speed limit is increased during the summer months. Headlights and seatbelts (front and back) must be on at all times. Driving under the influence of alcohol or other intoxicating substances is punishable by law.

# Local transport

**Taxis:** Taxis must clearly display their fares, driver's taxi service licenses, and a meter. The initial charge for entering a cab ranges from 2 to 3.5 euros. Different taxi companies have different rates, but the average charge per kilometre is 0.5 euros. There is no additional charge for ordering the taxi by phone, and it usually takes the cab just five to ten minutes to arrive. All taxi drivers must give you a receipt (in Estonian, ask for "Kviitung, palun"). Locals usually give the exact fare and no tip. As in most major cities, some dishonest drivers attempt to overcharge unsuspecting passengers. If in doubt, note the taxi company and license plate number.

**Public transportation:** Tallinn has a public transport network of buses, trams and trolley-buses. Other Estonian towns have buses. Schedules are posted at bus stops. Tickets are available at newsstands (the yellow and blue "R-kiosks") and from the driver. Check the prices and timetable for Tallinn bus lines for any bus stop at **www.tallinn.ee/eng**.


# Accommodations

All major hotels in Tallinn have been newly built or completely renovation in recent years. Despite annual additions to the number of hotels and rooms, it can nonetheless be difficult to find a hotel room on short notice (particularly over the week-end). For the best selection, we urge visitors to Tallinn and the rest of Estonia to book hotel rooms in advance. For more details, see the Estonian Tourist Board website at **www.visitestonia.ee**.

# Money

On 1 Jan 2011, Estonia adopted euro as its currency thus replacing the Estonian kroon which had been the only valid currency in Estonia since 1992.

Most larger hotels, stores and restaurants accept Visa, MasterCard, Eurocard, Diner's Club and American Express. However, it is advisable to carry some cash with you.

Traveller's checks can be exchanged in most banks but are less likely to be accepted in shops. Eurocheque is the most widely accepted traveller's check, but American Express and Thomas Cook are also accepted. Banks are plentiful and easy to find in Tallinn. Most are open from 9:00 to 18:00 on weekdays, while some offices are also open on Saturday mornings. All banks offer currency exchange services. Exchange offices can also be found in larger hotels, the airport, harbour, railroad station and major shopping centres. ATMs are conveniently located around town; instructions are in English, Russian and Estonian.


# Telephones and Internet

The country code of Estonia is 372. Dial 00 for outbound international calls.

The GSM mobile phone system is available; please check compatibility with your operator. Public Internet access points have been set up all over Estonia. They are located in local libraries and post offices. There are over 100 wireless free Internet zones around the country, many of them in rather unexpected places - beaches, Old Town squares, stadiums, and concert halls.

# Emergencies

112 is the emergency number for ambulance, police and fire department. The police can also be reached directly at 110. Emergency numbers can be dialled free of charge. Select pharmacies are open 24-hours-a-day in many major towns. The one in Tallinn is located at 10 Pärnu Road (opposite the Estonian Drama Theatre); the one in Tartu is located in the Town Hall building (Town Hall Square).

# National Holidays

Estonians celebrate January 1 as New Year's Day, a rather slow and quiet day as people recover from the festivities. Shops open late and banks are closed. February 24, Independence Day, is celebrated with a parade of the Estonian Defence Forces at Vabaduse väljak (Freedom Square). May 1 is a bank holiday, similar to Good Friday and May Day. June 23 is the biggest holiday of the year as Estonians celebrate Midsummer Eve and the Victory Day in commemoration of the 1919 Battle of Võnnu, and June 24 is St. John's Day (Midsummer). August 20 is the Day of Restoration of Independence (1991). December 24 (Christmas Eve), December 25 (Christmas Day) and December 26 (Boxing Day) are usually spent at home with families.

# Food

Traditional Estonian cuisine consists of simple peasant food, such as cottage cheese, potatoes and bread, all of which are still important components of the local diet. The Estonian dark bread is the main staple missed by Estonians abroad. Typical Estonian dishes do not feature prominently on restaurant menus, and traditional home cooking is more likely to appear at small eateries in remote areas. Still, a few establishments have made Estonian specialities their niche; to sample Estonian cuisine, try the Vanaema juures, Kaerajaan and Kolu Tavern (Open Air Museum) in Tallinn, and the highly recommended Muhu Kalakohvik and Lümanda söögimaja on the Island of Saaremaa.

The list of the top 50 Estonian restaurants can be found at **www.flavoursofestonia.com**

# Drinks

The main drinks in Estonia are beer, wine and vodka. While many young city residents opt for beer or wine, the older generation and rural folk tend to prefer vodka. In the 1930s Estonian vodka made it into the Guinness Book of Records as the strongest vodka in the world (96°). Local brands of beer enjoy a very strong market position in Estonia. The two main breweries are Saku and A. Le Coq. Saku is Tallinn-based, and its corporate colour is navy blue while A.Le Coq is brewed in Tartu and its colour is red. There are also many smaller breweries. A full list of Estonian beers is posted at **www.BeerGuide.ee**

Spirits also include some traditional liqueurs. The famous Vana Tallinn (Old Tallinn) has a 45° alcohol content, and is coincidentally made from 45 ingredients - the recipe is known only to a handful of people. Indeed, the legendary 19th-century *kristallkümmel* (caraway liqueur) has made its long-awaited comeback.

Estonian wines, made from currants or other local berries, are rather sweet. Wine lovers usually prefer imported wine, of which there is an ever-increasing selection at stores and vinoteks. A very popular and refreshing non-alcoholic drink is *kali*, made of bread, malt, rye or oats flour and yeast; it has a characteristically dark brown colour. It was with this drink that the Estonians forced the Coca-Cola company into submission, or at least into a business deal. *Kali* was enjoying phenomenal sales, while Coke was not selling up to expectations. It was then that Coca-Cola decided to broaden its horizons by buying one of the local *kali* trademarks in order to make a profit on the stubborn Estonians.

# Entertainment

The entertainment scene in Estonia is vibrant year-round, providing visitors and locals alike with a long list to choose from. Concerts, festivals theatre, street raves, DJ competitions – Estonia has it all. It is not by chance that both Tallinn and Tartu have their own opera and ballet theatre. Tickets are an excellent value for the money; concert tickets cost around 10 euros, and best seats at the opera are yours for about 25 euros. For more information on the concert schedule see **www.concert.ee**; the programme for the national opera is posted at **www.opera.ee**. Tickets can be bought at the box offices or via ticket agencies located in all larger supermarkets, or via Internet (www.piletilevi.ee)

Even the most sceptical museum-goer is bound to find something intriguing in Estonia's large selection of museums, which feature everything from history, art, photography to toys, chocolate, musical instruments, even wax figures and many other topics. Most museums are closed on Tuesdays and many on Mondays as well. It is advisable to have cash on hand as many museums do not accept credit cards.

Tallinn is also bustling well into the night with booming and blooming club scene. Clubs are usually open and packed with energised vibes from Thursday to Sunday, with Friday and Saturday drawing the liveliest of crowds. In addition to local and resident DJs, clubs frequently present guest performers from London, the US and other club hubs. For those looking for a more mellow night on the town, Tallinn's street are brimming with pubs, vinoteks and bar-restaurants, many of which offer live music even on weekdays. Rather take in a movie? Films in cinemas are shown in the original language with subtitles.

## Shops

Souvenir shops in Tallinn and most other tourist locations are open seven days a week, 10:00-18:00 or 19:00. Big supermarkets and hypermarkets are open seven days a week from 9:00-21:00 or 10:00-22:00. Department stores close a few hours earlier on Sundays or, in smaller towns, may be closed on Sundays. Smaller food shops may have shorter opening hours. Some 24-hour shops can be found as well. Other shops usually open at 9:00 or 10:00 and close at 18:00 or 19:00; they often close early on Saturdays and are closed on Sundays. The majority of shops accept credit cards, with the exception of smaller stores and stores in rural areas.

## Souvenirs

Souvenir and shopping preferences vary hugely but there are certain souvenir gifts that have gladdened many a heart. Estonian handicraft comes in many forms. There are woollen sweaters and mittens with local ethnic patterns, linen sheets and tablecloths, crocheted shawls and veils, colourful woven rugs, handmade jewellery and glassware, baskets, and an array of wooden spoons and butterknives made from juniper. Fine and applied art for show and purchase is on display at art galleries around the country, featuring graphics, glass, ceramics, hand-painted silk scarves and leatherwork. Various herbal teas from wild plants are available at pharmacies. Local honey – pure or flavoured, e.g. ginger, is another delicious treat. In rural areas, you may find hand-milled flour. And those who keep coming back swear by the Estonian black rye bread. To bring home local spirits, popular choices include Vana Tallinn or *kristallkümmel* liqueur or local beer. And there is no place better than Estonia to buy Estonian music.

## Crime

Although common sense is advisable in all destinations, Estonia gives no particular reason to be excessively worried. Do not walk the unlit and abandoned areas alone at night. Do not leave bags or items of value in the car, as not to tempt car thieves or robbers. Pickpockets may operate at crowded tourist destinations in Tallinn, so make sure your wallet and documents are stored safely.

## Language

Estonian is not widely spoken in the world, so Estonians do not expect short-term visitors to master the local language. Still, local people are thrilled and pleased to hear a foreigner say *"Tere!"* (Hi!) or *"Aitäh* (Thank you) in Estonian. Knowledge of foreign languages is naturally a must for hotel staff and numerous other professions in the service sector. Many people are fluent in English, particularly the younger urban generation, and a great number of people also speak Finnish, due to Finnish TV, Finland's close proximity to Estonia and the great number of Finnish tourists. German is less widely spoken in Estonia, although previous generations have often studied German, not English, at school. Russian-language use has dropped to a point where older people no longer speak the language well and the younger generation have already chosen other languages to learn at school. Studying French has become more popular over the last few years but the number of people who speak French is still quite small. An English-Estonian dictionary is available online at **www.ibs.ee/dict.**

## Estonians

Estonians are typical Nordic people – they are reserved, not too talkative and speak rather monotonously, with very little intonation. All this may give one the impression of coldness bordering on rudeness. But rest assured, this is not the case, and the speaker may actually be extremely well-meaning, even excited. There are several well-known Estonian sayings, such as "Think first, then speak", "Weigh everything carefully nine times before making a move", and "Talking is silver, silence is gold". It is, therefore, no wonder that the people are not very good at small talk, do not waste too much time on grand introductions, and usually come straight to the point. This is why Estonians' English may sometimes sound shockingly direct. There is, however, often a subtle irony involved in Estonians' utterances - delivered with a serious face and just the slightest twinkle of the eye.

Estonians are relatively individualistic. There is a saying that five Estonians mean six parties. Even though people agree on the final objective, they insist on reaching it in their own ways. Estonians also value their privacy. In the old days, it was said that the neighbour's house was close enough if you could see the smoke from the chimney. Modern, tight-packed urbanites flock to remote countryside on the weekends to enjoy more space and privacy.

Even though guests at birthday parties and concerts are rather quiet and subdued in the onset, they warm up eventually and turn into a direct opposite of their day-character, as you are likely to see in Tallinn's clubs.

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