BELNET ANNUAL REPORT 2009

Safer & more efficient cooperation

IN EDUCATION AND RESEARCH



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"The Royal Meteorological Institute has its own contact person at BELNET, who does follow-up and whom we consult regularly."



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38–39 Peter strickx



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"Our systems and services form part of the critical infrastructure of the most important public institutions."

PIERRE BRUYÈRE, director

ALWAYS SMOOTH AND SECURE ONLINE

FOREWORD FROM DIRECTOR PIERRE BRUYÈRE

Today, the importance of secure networks can hardly be overemphasised. Computer crime used to be mainly the domain of individuals, whereas we now have to protect ourselves against organised crime and fraud. This unwelcome development has made security measures essential. It is also the reason why BELNET focused mainly on security matters in 2009.

We realise that BELNET's network, with its high base bandwidth of 10 Gbps, can be abused on a large scale. A single weak link in the system can lead to our vast network capacity falling into the wrong hands. Protecting the knowledge and the infrastructure of the educational and research sectors is our priority. This is why BELNET set up its own Computer Emergency Response Team (BELNET CERT) a few years ago to raise awareness amongst its customers and users and, where necessary, to help them to protect their working environments. We reinforced this mission in 2009.

THE FIRST BELGIAN CONTACT POINT FOR NETWORK THREATS

At the request of the Federal Public Service for Information and Communication Technology (Fedict) and in cooperation with the Belgian Institute for Postal services and Telecommunications (BIPT), we set up CERT.be in 2009. This is the first resource in Belgium which is concerned with threats over the Internet. CERT.be aims to serve the entire country: security experts, companies and critical infrastructures, as well as ordinary users. We consider the fact that BELNET was asked to develop CERT.be as a demonstration of confidence and a recognition of our experience in security matters.

To give further resonance to the security theme, we organised the first BELNET Security Conference in 2009. We will be repeating this on an annual basis. On the one hand, we want to present important security trends and our own services at these conferences, on the other, we also want to build up a network of security experts, exchange experience, and gather feedback about our services.

> "Whereas previously we invested time and resources in building up our network infrastructure, today we are concentrating more on the development of our network services."

"Business continuity has become an abiding concern."

NEW SERVICES ON AN EXTREMELY STABLE NETWORK

BELNET aims to help its customers and users to protect their networks and applications. In 2009, we worked on improving a number of security services such as the BELNET Vulnerability Scanner which traces network weaknesses, and the BELNET Digital Certificate Service which provides access control and authentication. In addition, we invested in a number of other new services and upgrades, mostly in preparation for their final launch in 2010. The development of services such as Videoconferencing and the E-collaboration Platform is part of an evolution over the past few years. Whereas previously we invested time and resources in building up our network infrastructure, today we are concentrating more on the development of our network services. In order to ascertain whether our services meet real needs, we survey our customers on a regular basis.

From the results of our satisfaction survey in 2008, it appears that our customers are satisfied to extremely satisfied with our services. Areas in which we could improve were incorporated in an action plan, together with the necessary resources for those improvements. We have also invested a great deal of effort to make the services we offer better known, and to help our customers and users to work with them. In this regard, we have revised the content of our website, set up workshops and hosted the annual BELNET Networking Conference. In 2009, we also hired a product manager to streamline the services we offer and to ensure that any new services we develop are subject to a scrupulous needs analysis.

STRENGTHENING THE ORGANISATION AND MAKING IT MORE PROFESSIONAL

The focus on service has resulted in an increase in the number of staff at BELNET from 33 to 39 full-time equivalents. In 2009, we started preparations for moving to new premises. The growth in personnel numbers has also required a higher degree of professionalism in our internal operations.

> "We see the fact that BELNET was asked to develop CERT.be as a demonstration of confidence and a recognition of our experience in security matters."

And because today, our systems and services form part of the critical infrastructure of the most important public institutions, business continuity has become an abiding concern. In 2009, we began the development of a complete and comprehensive Business Continuity Plan to ensure that our networks and services are always accessible, even in extreme circumstances, such as a fire on our premises or some other disaster.

Our customers and users expect that our services and networks are permanently available, that we can deliver outstanding quality day and night, and that we can guarantee the highest level of security. Our customer satisfaction survey shows that we do meet those expectations. But we must continue to stay in touch with our customers' changing needs. In the coming years, our focus will not only be on BELNET services, but also on operating BNIX (the Belgian National Internet eXchange) and the Belgian CERT. We have also completed all the preparations for developing a new FedMAN network – the network of the federal government.

I have no doubt that we can continue to rely on the dedication of our staff, partners and members of the management committee, to meet the challenges of the next few years. Our sincere thanks go out to each and every one of them.

PIERRE BRUYÈRE, director

OUR MISSION

1

BELNET stimulates scientific development by delivering and maintaining innovative highquality network infrastructures and associated services, to the benefit of Belgian higher education and research.

2

BELNET accelerates the growth of the knowledge and information society thanks to the expertise it has built up, its unique position in the market and its economies of scale.

3

BELNET deploys activities which strengthen the Internet in Belgium and sets up telematics and network projects for public authorities, administrations and public institutions. BELNET's activities include the development of BNIX (Belgian National Internet eXchange), the management and follow-up of FedMAN and the growth of CERT.be (the national Computer Emergency Response Team).

1

BELNET intends to meet the needs of the educational and research institutions and their end-users as far as network infrastructure and services are concerned in an optimum manner.

2

BELNET intends to deliver innovative networks and applications which will adapt to future needs.

3

BELNET intends to be a strong, visible organisation accessible to all educational and research institutions.

4

BELNET intends to deploy its means and staff in an effective way within an optimised organisation.

security report







"We are really a sort of Internet fire brigade."

BELNET sets up the national computer security team

"Trojan horses remain the greatest threat."

Interview with Luc Beirens, Federal Computer Crime Unit



"BELNET is the logical, necessary partner for a national CERT."

Daniel Letecheur of Fedict explains

The Internet has created many new possibilities. At the start of the 21st century it became even clearer that not everybody was using it in a positive way. BELNET pointed out at an early stage that users and networks had to be protected against all kinds of cybercrime. Since the launch of the national Computer Emergency Response Team (CERT.be) in August 2009, BELNET has played a formal and major role in this protection.

Computer security deserves **more attention**

MORE THREATS

While not everything can be measured, it seems that the number of crimes on the Internet is rising internationally. The borderless character of the technology and the low security awareness of users has led to this growth. In 2009, there were some notable incidents. The office of the Swiss Minister of Foreign Affairs had to deal with a cyber attack, and banks were victims of criminals who were becoming increasingly professional. But it is not only large companies or governments who are attractive targets. Every Internet user can now be faced with unwanted mail (spam), fake websites (phishing), hidden features in software programmes (Trojan horses) and other types of cybercrime.

NATIONAL SECURITY IS NECESSARY

Various international and national initiatives have been taken to protect governments, companies and citizens. In Belgium, the government set up eCops, a website where cybercrime incidents can be reported. In 2009, BELNET set up CERT.be, the national Computer Emergency Response Team which will, in the first instance, give better protection to economically critical sectors such as transport, energy, and telecommunications. If companies in such sectors fall victim to large scale attacks, there can be far-reaching economic consequences. The general public is also being addressed. The idea, primarily, is to prevent security problems, but CERT.be is also involved in emergencies. It provides the police with information about incidents, they then identify criminals and bring them to justice. Each month, the national CERT handles between 50 and 100 serious incidents. As network threats also come from outside Belgium, CERT.be works within a worldwide network of computer security experts.

BELNET sets up a national computer security team



Jan Torreele (left), Technical Director, BELNET and Lionel Ferette (right), CERT.be coordinator, BELNET

"We are a sort of Internet fire brigade. We answer emergency calls, **assist**, **coordinate** and **raise awareness**."

BELNET regards Internet security as a top priority. In order to enhance the security of its own customers and users, it set up its own Computer Emergency Response Team (CERT) six years ago. BELNET is now also responsible for CERT.be, Belgium's first national computer security team. BEFORE CERT.BE, YOU ALREADY HAD A LOT OF EXPERIENCE IN YOUR OWN COMMUNITY. IS SECURITY AN IMPORTANT ISSUE THERE?

JAN TORREELE, TECHNICAL DIRECTOR BELNET: "We control a network for universities and colleges. So we have a lot of IT students on our network who have the time, the knowledge and the inclination to experiment. Some are drawn to the hacker culture, and they like to test the boundaries of technology. From this point of view, security is a permanent concern. Another aspect is the power of our network. It has enormous capacity and there are many very powerful computers connected to it. If you got control of it, you could do a massive amount of damage, by sending huge amounts of data to one specific target for example, so that everything there crashes. So having our own CERT was very important to us. Our customers also requested it. I still remember one university IT manager who told me years ago that he would rather shut his network down if there was a threat than have to repair thousands of infected computers. That's why we made our own resources available for our own CERT relatively early."

GIVEN ITS HISTORY, WAS BELNET THE LOGICAL CANDIDATE TO BUILD A NATIONAL CERT?

JAN TORREELE: "Not just because of our experience with our own CERT. Previously, we were also the de facto international contact point for anything to do with network security. Only we had neither the authority, nor the resources. We could therefore only work on a best effort basis in the most severe cases. We were also pleased that the Minister responsible for IT finally asked Fedict formally to set up a national initiative. Fedict then asked us to build an actual national CERT, in cooperation with BIPT. We have the experience and the appropriate expertise. As a public institution, we furthermore guarantee neutrality and, in addition, we are a stable factor. There are few players in our domain who have been around for more than fifteen years."

WHAT HAVE THE FIRST EXPERIENCES WITH CERT.BE BEEN?

LIONEL FERETTE, CERT.BE-COORDINATOR: "We have of course barely started with CERT.be, but it is clear that a lot of people have high expectations. Expectations are sometimes unrealistic: we cannot just ban people with evil intent from using the internet. We cannot do it, we may not do it and we do not want to do it. We work within a legal framework and do not have the authority which the police or the courts have."

JAN TORREELE: "You should think of us as a sort of Internet fire brigade that answers emergency calls, assists, coordinates and raises awareness. We focus primarily on the critical infrastructures of our society: the banks, transport, government, etc. We must first build up familiarity and trust there, because many organisations are reluctant to report a security incident. If there is trust and people see that we do useful work, then hopefully they will. Eventually, we would like every large company to have its own CERT function. A designated person who knows the problems and with whom we can work is important. We also want to inform the general public and raise their awareness, but only secondarily."

HOW DO YOU SEE THE FUTURE?

JAN TORREELE: "We see an evolution from individual hackers towards organised crime and targeted attacks

"We do not have the same **authority** as the police or the courts."

on organisations. People often want to steal information or money, sometimes they target the government for political reasons. And as the government has an increasing online presence, it is naturally more open to online attacks. Crime is likely also to switch to smartphones and tablet computers in future."

LIONEL FERETTE: "We have more and more to do with Advanced Persistent Threats. Criminals don't want to cripple businesses, but instead try to use loopholes to penetrate systems and then remain undetected for as long as possible in order to steal as much as possible. The era in which hackers destroyed something for their own pleasure and glory has largely passed. Now people try to remain invisible instead. One of CERT.be's primary tasks is to make invisible problems visible, to recognise patterns and to analyse them so that society can act better against them."

IS BELNET TAKING OTHER INITIATIVES?

"As far as BELNET is concerned, security is not limited only to CERT.be. Because raising awareness is an important aspect, BELNET arranged the first BELNET Security Conference in 2009. From now on, this conference will be an annual event. Through the BELNET Security Conference, BELNET aims to provide its customers and users with even better information about security on the Internet. The programme comprises presentations and keynote speeches about security questions and developments. These cover practical security tips, solutions and services on offer. In addition, BELNET customers can call on a growing number of services to protect their networks and computers. These include the Vulnerability Scanner and the Digital Certificates Service, which delivers digital certificates with which customers can protect access to their own websites."

Internet crime in 2009. A few figures.

945 euros

was the average amount of Internet fraud per incident reported to police.

9,891

Internet crimes were recorded.

15 botnet servers

shut down by the FCCU (Federal Computer Crime Unit).

1,740 cases

led to the identification of malicious Internet users, more especially users of e-mail addresses, IP addresses and pseudonyms. This represents an increase of about 400% compared with 2002.

230,000 credit cards

were blocked after abuse. This was a fourfold increase over 2008.

Interview with Luc Beirens, Federal Computer Crime Unit



"**Trojan horses** remain the greatest threat."

As head of the Federal Computer Crime Unit, Luc Beirens knows better than most which computer dangers we all face. With Internet banking, violations are limited, but he is more worried about other areas.

WHAT ARE THE GREATEST DANGERS YOU HAVE TO DEAL WITH?

LUC BEIRENS: "Trojan horses remain the greatest threat. The principle is simple: unnoticed malicious software is installed on the victims' computers, when they click on a link or install a so-called software update for example. Such a covert programme can be used by cybercriminals to extract information from your computer or to use applications on it. With the help of Trojan horses, in the last few years, cybercriminals have, for example, managed to withdraw money from their victims' bank accounts. This is a worldwide business which is worth millions. Trojan horses can also automatically send information about the infected computer and its user's habits to databanks controlled by criminals. In this way, criminals get information not only about surfing habits and e-mails, but also about passwords, logins and all sorts of highly personal data. We see increasingly that this information is used for fraud or extortion. Trojan horses are therefore the ideal tools for committing economic, industrial or other forms of espionage. In addition, through Trojan horses, most computers are also part of a botnet."

WHAT ARE BOTNETS?

Luc BEIRENS: "These are networks of computers which have been infected by a Trojan horse and which can be controlled by cybercriminals via intermediate stations (botnet servers). The criminal use of botnets first appeared in 2004, and has since been seen increasingly frequently. In 2009, the Federal Computer Crime Unit took fifteen botnet servers out of circulation. This year, we are expecting that number to at least double. Botnet servers are important exchanges in a botnet. When you take out a server, you disrupt the botnet's operations but it is not necessarily dismantled. If everyone around the world cleans up outside their own front door, the streets are clean."

WHAT CAN YOU DO TO COMBAT THIS AS A USER?

LUC BEIRENS: "People must be more vigilant about everything they see and do on their computers and on the Internet. In the first place, they should keep their computers in good health by regularly updating the operating system and the necessary security software with the latest versions. But even this is not enough. They must think twice before clicking on a link to install software for example. We often see that victims have ignored the most basic security measures: insecure passwords,

Internet crime over recent years

In 2004

a British betting site was extorted and threatened virtually. Because they didn't pay the sum demanded, a denial-ofservice attack was launched through a botnet of hacked computers which sent such a mass of data to the site that it was completely paralysed.

In 2007

critical infrastructures in Estonia were attacked with botnets by cyberterrorists. Banks were also subjected to virtual attacks. The government decided to block all data traffic to and from the country.

In 2008

the website of Georgian president, Michail Saakasjvili, moved to the United States after (supposedly Russian) hackers tried to crash Georgia's servers with a botnet.

In 2009

the Conflicker virus was disseminated over a few days to millions of computer systems worldwide, causing enormous damage to companies and government services.

no back-up, etc. You don't have to look far to see the reason for this dangerous recklessness. There is far too little education at school and in companies about the dangers of using computers and the Internet and how you can minimise these dangers."

HOW DOES BELGIUM COMPARE WITH ABROAD?

Luc BEIRENS: "As far as Internet banking security is concerned, we have a lead. The number of e-banking fraud cases we handled in 2009 was very limited, and it is certainly not rising, in contrast to what is sometimes reported in the media. The chance of being robbed via Internet banking is an awful lot smaller than that of being robbed physically in the bank. Belgian banks have strengthened their measures and are more than properly protected. With some foreign banks, a password and a login is still all you need for e-banking. In our country banks will soon be obliged to use a special card reader or Digipass. This helps to reduce the risk of abuse."

WHERE DOES WORK STILL NEED TO BE DONE?

Luc BEIRENS: "Our fragmented approach make us vulnerable. There is no one in this country who is really responsible for an overall approach to cyber defence. The responsibility is split between bodies such as the armed forces, the police, Fedict and the federal government's Foreign Affairs, Justice, Internal Affairs and Economy services. In the USA and the UK, they have a centralised approach. This is also necessary here: if an incident occurs, there needs to be a swift and coordinated follow-up. And an incident is always possible. In 2007, Estonia was attacked by hackers. The Estonian government had to deal with it quickly and even decided to block all data traffic entering and leaving the country."

IS BELNET'S CERT.BE A GOOD THING?

LUC BEIRENS: "I am pleased that the national CERT has finally been set up. It is something I had always

The Federal Computer Crime Unit (FCCU)

The FCCU tackles different types of Internet and computer crime, such as phishing, fake lotteries, hacking, social network fraud and the sale of stolen credit card numbers.

It helps to prevent and fight Internet fraud and attacks on critical IT infrastructures. The FCCU also manages the www.eCops.be hotline where, amongst other offences, child pornography sites and phishing sites can be reported.

The FCCU is part of the Federal Judicial police and works in the fight against cybercriminals, often in cooperation with foreign police services.

advocated. Now companies and individuals who don't want to file a complaint with the police because they are worried about negative publicity, at least have somewhere to go with their information and questions about cybercrime and serious IT incidents. The fact that, in view of its expertise in such matters, the national CERT was set up under BELNET's guardianship is a good thing because, as police, we can only deal with matters within the framework of a judicial case. CERT.be is primarily an analysis centre and hotline for threats to critical infrastructure. That is why I think that it's important to expand the CERT.be team further and to encourage - or maybe even compel - government institutions and companies involved in the critical infrastructure to report incidents to CERT.be. We are not there yet."

Daniel Letecheur, information security analyst at Fedict



"BELNET is the **logical, necessary partner** for a national CERT."

Cybercrime is ubiquitous. There are programmes on the Internet which allow anyone to hijack user accounts or switch off critical services. CERT.be is an answer to such threats. Each month, the Computer Emergency Response Team handles up to 100 serious IT incidents in our country. Here is a glimpse behind the scenes in this insidious, frightening war.

In 2007, Estonia had to deal with a cyber attack which nearly brought the entire country to a standstill. The Estonian government called it 'the IT 9/11'. In April 2010, a cyber attack in the United States threatened the country's entire electricity network. That fed the fear that a large scale attack could paralyse the world's largest power in just a few hours.

CERT MONITORING AROUND THE WORLD

These two incidents made the front pages around the world. Hundreds of other, less serious, incidents are diligently followed up by CERTs. Specialists observe the incidents, analyse them and keep



CERT.be since its foundation

August 2009

The national CERT was set up. Fedict led the project, BELNET was responsible for operations. The aim: to notify critical companies and the administration about IT risks and to handle incidents (detecting, analysing, taking action and notifying).

September 2009

CERT.be was announced by the government.

January 2010

CERT.be also targeted the general public via its website. This contains security advice about best practices and links to sources of information.

the most sensitive sectors up to speed: banks, hospitals, government administrations, energy companies, etc.

Belgium set up CERT.be in August 2009. "We did not have a national Computer Emergency Response Team despite many of the most important international institutions being located here, and Belgium was developing an increasing number of e-government applications. There was an urgent need for a structure to handle incidents, assist with problems and give advice about best practices," says Daniel Letecheur, information security analyst at Fedict.

More than six months after the launch of CERT.be, the staff there have no shortage of work. On average, they handle more than 300 notifications per month, they subject 150 to 200 incidents to further investigation and judge 50 to 100 of these incidents as 'serious'. "More than half of today's attacks are aimed at user accounts or systems," says Daniel Letecheur.

FEDICT, PROJECT INCUBATOR

The telecommunications legislation obliges the state to protect the telecom infrastructure. CERT.be was born out of this requirement. Its creation was entrusted to Fedict, the Federal government service which aims to bring new technology within the reach of everyone. Fedict has launched services such as Tax-on-web, the PoliceOnWeb hotline, eID (the electronic identity card) and eBirth (for notifying births).

"When CERT.be was set up, BELNET was called upon, for the substantial expertise it had built up. Originally CERT.be comprised four staff, all IT specialists with exhaustive knowledge of networks and security. Today, the team has six specialists; in 2013 or 2014, that will be ten."

BELNET, A NATURAL PARTNER

"BELNET is the logical, necessary partner," says Daniel Letecheur. "BELNET is part of the administration and we want to keep the national CERT within the public sector. Furthermore BELNET has experience in this subject. BELNET had already been involved with the networks of Belgian universities and administrations for over fifteen years and already had its own CERT to protect its network and to notify its users.

We have an outstanding relationship with BELNET. Each month we get a detailed report about activities over the previous period and the different sorts of incidents which they have encountered. We plan activities together, such as the publication of information on the web, visits to partners or prospects, or meetings with institutions and companies to present the national CERT."

A COMPLEX INFORMATION NETWORK

"All over the world, the number of attacks on IT systems is rising," says Daniel Letecheur. "They come from all quarters. There are programmes on the Internet which allow anyone to hijack user accounts or switch off critical services. The information is there on the net, all criminals have to do is look for it and use it." With this sword of Damocles over our heads, CERTs around the world exchange critical information. The information at the disposal of CERT.be comes from different sources. CERT partners share their information with CERT.be, especially if it involves Belgium. Companies and government administrations also share information with CERT.be. Banks, for instance, have built up their own internal response capability, but they can always report an incident to us, such as e-banking fraud. We can then start an investigation and, if necessary, recommend that the judicial authorities take action to close down a particular bank account. In this respect, CERT.be works in close collaboration with the FCCU (Federal Computer Crime Unit)."

THE CERT.BE APPROACH

The future of CERT.be rests in its approach, through cooperating and sharing with other parties involved in the fight against cybercrime. "We will raise the operational capacity of our service so that we can handle more incidents within a shorter timespan. We must achieve this objective by mid-2012," says Daniel Letecheur. For the rest, CERT.be wants to benefit from the integration and coordination of the different players in this area. "Today there is a military CERT, but also a Federal Computer Crime Unit, and then there's Justice. The aim is that everyone works even more closely together."

CERT.be in figures

200 to 300 reports per month

150 to 200 incidents per month

50 to 100

serious incidents per month. A serious incident is an instance of fraud, an attempted fraud or (attempted) identity theft in the banking sector.

Security on the Internet

Use a firewall

With a firewall, you can give your computers better protection against attacks over the Internet.

Never react to spam

The term 'spam' is used to describe unwanted e-mails. In the first instance, spam is sent to a vast number of automatically generated e-mail addresses. If you react to a spam message, the sender knows that your address is active. You can be sure that you will receive many more spam e-mails.

Use safe passwords

Access to certain applications and information requires a password. A safe password consists of at least eight characters, preferably a mixture of numbers, capital and lower case letters. Use different passwords and change them regularly.

Do not click on links in e-mails

Links in e-mails are often used to lead unsuspecting users to a fake website which is a copy of a real website. Criminals try to gain access to the user's confidential data such as credit card details or passwords via the fake website. This dishonest practice is called 'phishing'. Avoid phishing by thoroughly verifying the addresses of such websites and by then entering addresses you know into your browser yourself.

Use an antivirus programme that is updated daily

Always check that downloaded files or programmes are safe before you open them for the first time. Use an antivirus programme which offers real time protection and which is constantly updated.

Install security patches

All security patches for the operating system and for applications must be installed as soon as they become available.

Do not send any confidential data via e-mail

Never send confidential data, such as your credit card details or passwords via e-mail. Bona fide companies never ask for such information via e-mail. Even if you are mailing to a trusted source, it is not a good idea to include confidential information in your e-mail. This information can be easily intercepted.

Be wary of automatic replies

So-called out-of-office replies can give hackers and spammers useful information. An automatic reply which tells people when you are on holiday contains information of great interest to burglars and thieves.

Be careful with peer-to-peer networks and software sharing

Users of Internet chat rooms, instant messaging and file sharing tools in peer-to-peer networks must be on their guard for links and programmes which are shared. Not only is there the risk that they infringe copyright laws, many also contain viruses or Trojan horses. Peer-to-peer software can also contain spyware, undesired adware or vulnerabilities.

More security tips on www.cert.be

From the 2008 satisfaction survey, it appears that all our customers are satisfied to extremely satisfied and that over 41% of them have also recommended us more than once.

EXPERTISE



A WORD FROM

HENRI MALCORPS

HENRI MALCORPS

MANAGING DIRECTOR OF THE ROYAL METEOROLOGICAL INSTITUTE (RMI/KMI), ABOUT BELNET

"The Royal Meteorological Institute is probably one of the largest users of the BELNET network. Every year, we send out more than 5,000 weather forecasts and 100 storm warnings to governments and a wide variety of user groups. So we have to handle a huge amount of information: about 83 million observations in Belgium and around 800,000 radar and satellite images. And then there are still the results from digital models and the data which we exchange with colleagues abroad.

In order to be able to process and send all this, we need a powerful network. BELNET knows that infrastructure alone is insufficient. It also offers many other services. For instance, we work on highly detailed weather forecasts with virtual teams: for that we call on BELNET's professional videoconferencing system. In the future, federal institutions, such as the Royal Library or the museums, will be doing even more digitising to make their collections more accessible to the public. This requires enormous storage capacity and fast access via the Internet. Our extensive databanks can be made accessible, but this is not our institution's core task. We want a reliable partner who can guarantee us large storage capacity with security guarantees, all laid out in clear Service Level Agreements. The services that BELNET offers can be expanded in the future.

BELNET looks for answers to our questions and inspires us with great confidence in them. The fact that the people at BELNET work within the federal government structure and face the same challenges as we do strengthens our relationship. We are on the same wavelength. We have our own contact person at BELNET, who does follow-up and whom we consult regularly. We are very happy that we can count on their support around the clock and that the BELNET team is constantly growing. We know that continuity is guaranteed and are on cloud nine having a partner like BELNET."





"We are on cloud nine having a partner like BELNET."

THE ROYAL METEOROLOGICAL INSTITUTE (RMI/KMI) IS A FEDERAL SCIENTIFIC INSTITUTE WHICH COLLECTS, ANALYSES AND DISSEMINATES INFORMATION ABOUT THE WEATHER.



CUSTOMERS AND USERS

At the end of 2009, 193 organisations were connected to the BELNET network, including all Belgian colleges and universities, a number of government institutions, research divisions of private companies and international organisations. In total, about 700,000 people used the BELNET network almost every day.

1.1

1.

EDUCATION AND RESEARCH

All Belgian colleges and universities have been connected to the BELNET network and services since 2008. Some very large organisations, such as Enseignement de la Province de Liège (the Province of Liège Education service), the University of Gent and the Catholic University of Leuven (each with over 40,000 end-users), belong to this group. But BELNET also delivers its services to a number of other smaller institutions, such as specialist public or private research centres with a staff of only ten. Federal scientific institutions are also BELNET customers.

1.2 other customers and users

BELNET also has some other federal, regional and local administrations as customers. BELNET set up FedMAN for the federal government. In 2009, BELNET got ready to develop FedMAN3. As the controller of BNIX, the Belgian National Internet eXchange, BELNET also works for private Internet providers in the Belgian market. Via BNIX, we keep Belgian Internet traffic fast, secure and affordable. At the end of 2009, 44 organisations, mainly providers of Internet services and content, were connected to BNIX. In 2009, the renewal of the BNIX platform was also started.

BELNET CUSTOMER SURVEY

13

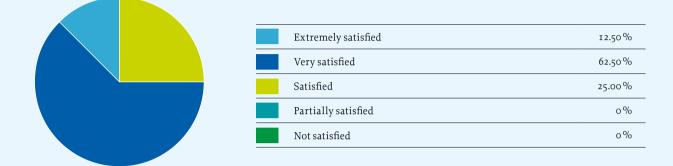
At the beginning of 2009, BELNET published the results of a large scale customer satisfaction survey which was carried out in the last quarter of 2008. We researched satisfaction amongst our users as well as the importance they attached to different aspects of our services, such as how prepared they were to recommend our services. From this research, it appears that our users are satisfied (25%), very satisfied (62.5%) and extremely satisfied (12.5%). The combination of low price, high bandwidth and high dependability are valued extremely highly by our customers. Customers have a positive attitude towards BELNET and are prepared to recommend us. Points for improvement were analysed and included in an action plan which was implemented in 2009. At the beginning of 2010, a new survey was launched to measure actual improvements.

1.4

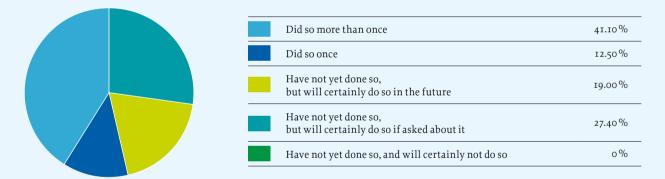
BELNET CONFERENCES, BELNET WORKSHOPS AND WEBSITE

BELNET took different initiatives to tell customers and users about its services, to make services more accessible and to help users to get maximum benefit from the services. Meanwhile, regular events such as the BELNET Workshops and the BELNET Networking Conference also took place in 2009. At the conference and during the workshops, experience and ideas were exchanged and users were able to meet BELNET staff and learn about new developments. With 180 delegates, the 2009 BELNET Networking Conference was a great success. In the morning, the most recent developments in e-technologies and the role of the research and educational network were highlighted, with the emphasis on their innovative use in higher education and research centres. There was also discussion about what is happening beyond our borders, notably the impact of research networks in countries which lack technology. In the afternoon, practical examples and applications were presented s well as new BELNET services. In 2009, we also organised the second BELNET Security Conference. In addition, we improved information about our services, by revising our website for instance. The latest version of the website was launched in January 2010.

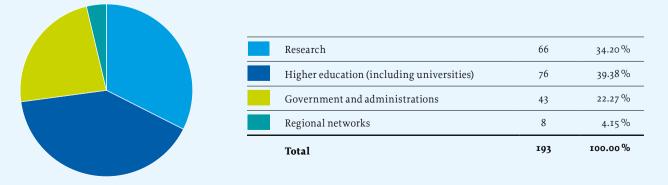
BELNET USER SATISFACTION



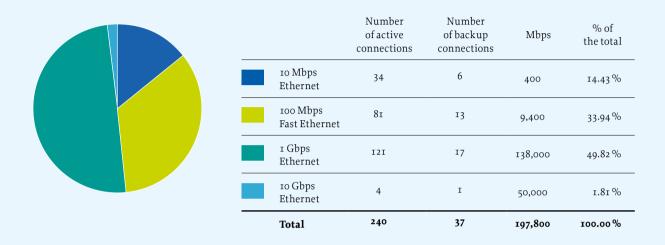
USERS WHO RECOMMENDED BELNET IN THE 6 MONTHS BEFORE THE SATISFACTION SURVEY



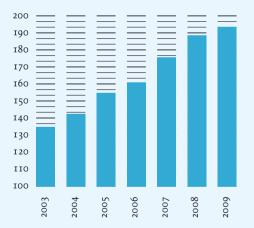
NUMBER OF INSTITUTIONS PER CUSTOMER GROUP, END 2009



SPLIT OF CONNECTIONS BY TYPE AND ACCESS CAPACITY

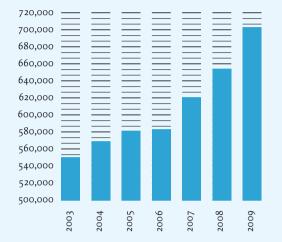


GROWTH IN THE NUMBER OF CUSTOMERS AND PERCENTAGE GROWTH OVER THE PREVIOUS YEAR



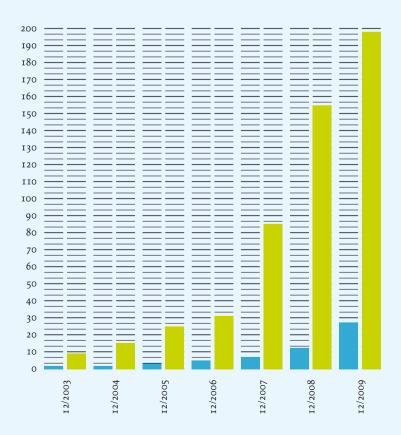
2009	193	2.66%
2008	188	6.82 %
2007	176	9.32 %
 2006	161	3.87 %
2005	155	9.15%
 2004	142	5.19%
 2003	135	





2009	700,374	6.83%
2008	655,600	5.72%
2007	620,100	5.89%
2006	585,600	0.27 %
2005	584,000	1.57 %
2004	575,000	4.55%
2003	550,000	

GROWTH OF BELNET CUSTOMERS' TOTAL ACCESS CAPACITY, IN GBPS





BELNET has ongoing initiatives to inform customers and users about existing services and then to assess the needs for developing new services.

SECURITY



A WORD FROM

Wim Pouseele

WIM POUSEELE

IT INFRASTRUCTURE MANAGER, VLERICK LEUVEN GENT MANAGEMENT SCHOOL ABOUT BELNET

"The collaboration with BELNET began when we moved to another campus in Gent. In the following years, we called on them for an increasing number of services, such as for our intercampus connection between Gent and Leuven. Previously we had had our own VPN connection for inter-campus traffic, but now it is all with BELNET. This means that we no longer have to manage our own connection and we no longer have to invest in hardware.

We also make extensive use of BELNET's Videoconferencing. We have our own solution for videoconferencing between two institutions on our campuses, but as soon as a third party is involved, BELNET's Videoconferencing is absolutely essential. Without that system we would have needed to buy all the equipment, set up complex firewalls, etc. Now none of this is necessary. Our colleagues and students use the service several times a week. Our Board of Directors also uses Videoconferencing for discussion between Leuven, Gent and St. Petersburg. It works well; we can make a booking with BELNET and start immediately afterwards.

Basic services like DNS registration and certification are also very important to us. With these services we can limit the overload here. Another good point is the introduction of the 24/7 helpdesk. Previously it was sometimes a little difficult to solve a problem. You couldn't really wish for a better provider. Actually, BELNET is also far more than just a provider. BELNET's people share thinking, help to find solutions and are not afraid of making major efforts. I am very satisfied."





"BELNET's people are not afraid of making major efforts."

WIM POUSEELE IS RESPONSIBLE FOR THE IT INFRASTRUCTURE AND THE IT SECURITY OF THE VLERICK LEUVEN GENT MANAGEMENT SCHOOL.



NEW AND IMPROVED SERVICES

2.

BELNET's evolution from network provider into service supplier has been underway for some years and took another step forward in 2009. Our customers and users all have ample bandwidth, but what they now need most are new services which can make their work easier and better. BELNET's goal is to assess needs and thus develop appropriate services. We also work on the continuous improvement of existing services. In short, 2009 was all about a number of preparatory activities to provide broader and better services.

2.1 Belnet r&e federation

In 2009, BELNET began preparations for a federation of universities and service suppliers. Users from an institution which belongs to the federation will, using their own user name and password, gain access to certain services of a federation service supplier in real time. There is therefore no need to register twice nor submit different registration data. BELNET acts as the central contact point in the federation, but users' details remain with the institutions themselves. In this way, all data are always current and the users' privacy can be respected to the utmost.

2.2 DIGITAL CERTIFICATES SERVICE

BELNET improved its system of digital certificates in 2009. We are empowered to issue certificates for servers and DNS names, by which networks and servers are protected. Digital certificates are only available to recognised research centres, universities and colleges connected to the BELNET network. Their allocation is in accordance with rules laid out by TERENA, the Trans-European Research and Education Networking Association. In 2009, 767 certificates were issued.

VULNERABILITY SCANNER

23

The BELNET Vulnerability Scanner tracks weaknesses in the network and flags up potential threats and vulnerabilities. The Vulnerability Scanner does not prevent attacks, but makes better evaluation possible of the protection of the network in question. Migration towards an improved and more comprehensive version of the Vulnerability Scanner, with onsite support, was taken in 2009.

2.4

VIDEOCONFERENCING

The number of videoconferences has risen in line with the increasing internationalisation of education and research. The BELNET videoconferencing service was used 332 times in 2008, a figure which rose to 637 in 2009. We improved our system for MCU Videoconferencing. The Multipoint Control Unit (MCU) allows users to set up a high-quality videoconference with parties split over more than two geographical locations. The images are exchanged over the BELNET network.

2.5 E-COLLABORATION PLATFORM

In 2009, BELNET tested a new E-collaboration Platform, a virtual meeting space for colleagues, students, and teachers. With the help of a userfriendly web tool, online lessons and virtual meetings can be set up at any time in any location. The system is simpler than videoconferencing and extremely flexible. People can, for example, allow access to their own computers and exchange documents easily. A computer, a webcam and a headset are all that is required to use it. This service was launched in 2010 as a pilot project.

2.6 **Belnet leased line**

Some BELNET customers can only access the BELNET network via a separate leased line. Until recently they had to call on a third party for this leased line. In 2008, BELNET decided to carry out a detailed study into the possibility of offering customers connectivity with a leased line in one package. This service was launched in the first quarter of 2009. Since then, BELNET customers have no longer had to look for a separate supplier; thanks to BELNET's economies of scale, they usually pay a lower price. In the first half of 2009, BELNET equipped some twenty customers with a leased line.

2.7

STANDARD PACKAGE AND PLUS SERVICES

BELNET brought all its services together into a standard package with a series of optional Plus services. This arrangement was officially launched at the beginning of 2010.

The standard package includes the connection and a number of extra services for which the customer pays no additional charges. It comprises:

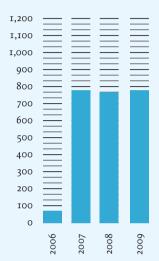
- Connectivity
- IP Addresses (IPv4 as well as IPv6)
- DNS Services
- Clock Synchronisation
- Software Archive
- Bandwidth Statistics
- BELNET CERT
- 24/7 helpdesk
- Support & Advice
- Workshops & Conferences

With BELNET Plus services, users can further improve the convenience, security and dependability of their connections. Plus services include:

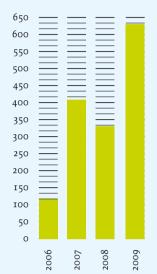
- Backup Connectivity
- IPv6 Connectivity
- Multicast
- Domain Name Registration
- Instant Messaging
- Digital Certificates Service
- Vulnerability Scanner
- Videoconferencing
- BEgrid
- eduroam
- BELNET Leased Line
- E-collaboration Platform
- Interconnectivity service

	Spam	1,333
	System compromise	184
	Query	56
	Scan	16
	Denial of service	I
	Piracy	150
	Viruses/worms	51
	Phishing	3
	Others	50

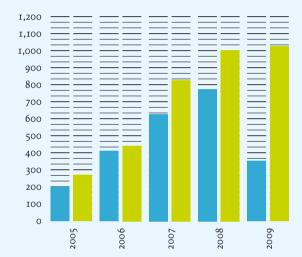
BELNET CERT - INCIDENTS PER TYPE IN 2009



DIGITAL CERTIFICATES SERVICE -NUMBER OF CERTIFICATES DELIVERED SINCE STARTING IN 2006



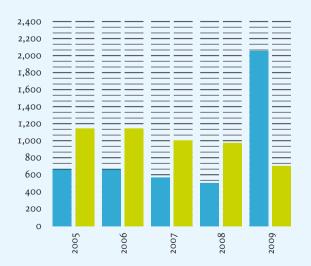
VIDEOCONFERENCING - NUMBER OF SESSIONS



BEGRID - GRID COMPUTING

Number of certificates	354
Number of CPUs	1,016

BELNET CERT - ALERTS AND SECURITY ADVISORIES



Number of alerts	2,074
Number of security advisories	717

BELNET manages the FedMAN network which is the basis of all e-government applications in Belgium. In 2009, it was prepared for IPv6.

Peter Strickx

A WORD FROM



PETER STRICKX

CHIEF TECHNOLOGY OFFICER AT FEDICT, About belnet

"In 2001 we had a rather primitive network at the federal government services, but that all changed a year later. We needed a powerful and reliable network for e-government and we called on BELNET for that. BELNET already had a great deal of experience with its own research network and so they were the logical choice for us. There are a lot of competent people in the organisation. And BELNET is a government service itself, which obviously makes the collaboration that little bit easier.

Thanks to BELNET, our network's bandwidth and reliability have advanced greatly. We now achieve 1 Gbps in contrast to 2001 when our speeds for some departments were between 192 and 512 kbps. That is an improvement by a factor of 5,000. All the connection points are now connected to the network via two independent telecom operators, resulting in 99.99% effective availability. Access and information security have also greatly improved. Previously, each government service had its own Internet connection and the networks were disparate. Now the FedMAN network links all federal government services together and there is one single, common, fast and secure access portal to the Internet.

In 2006, BELNET began the second phase of the FedMAN network. An important test project in this regard is the migration from IPv4 to IPv6. The growth of the Internet threatens to cause a shortage of IP addresses, and IPv6 is a adequate solution. With this project, BELNET is not waiting to see how the market will evolve, but is staying one step ahead of the game. Contracts in the telecommunication world often only last a few years and you have to be able to take a long term view. BELNET does that. With this kind of proactivity, innovation and expertise, BELNET, as Fedict's partner, is playing a key role in achieving 'virtual connected government'.





"BELNET plays a key role in achieving a virtual connected government."

FEDICT IS RESPONSIBLE FOR THE IMPLEMENTATION AND SUPPORT OF E-GOVERNMENT IN OUR COUNTRY.



NETWORKS AND GRIDS

BELNET controls three physically separate networks: BELNET, BNIX and FedMAN. BELNET's optical infrastructure, which came into operation in 2008, made its presence strongly felt last year, both in its role as facilitator of the Flemish supercomputer and as the founder of BEgrid. The first step in the update of BNIX started in 2009. An update of the FedMAN network from 2011 is already in preparation.

3.1

BELNET

The BELNET network which came into operation in 2008 is hyper-stable, of very high quality and delivers outstanding performance. The network links all the Belgian universities and colleges in one highly technological environment. Its development remains a very dynamic process. In 2009, part of the network was enhanced, by replacing a few network amplifiers amongst other things. In order to deliver the highest possible quality of data traffic to and from our customers, BELNET also started a new network analysis and security project in 2009. BELNET wants to extend the network's central optical ring in Brussels by adding two carrier-neutral datacentres, and started preparations for this project in 2009.

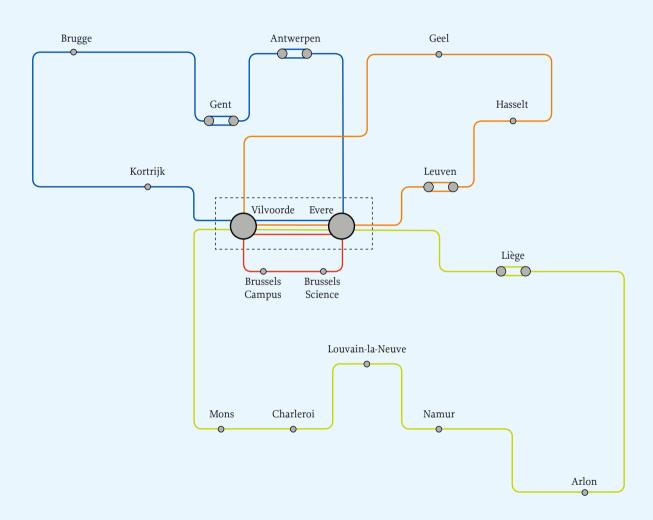
3.2

FEDMAN

Since 2001, BELNET has been responsible for the implementation, management, development and support of the FedMAN network. This federal government network is the foundation on which all Belgian e-government applications are built. In 2009, BELNET carried out various projects, some on its own initiative and some on request from Fedict.

- FedMAN was made suitable for IPv6. This latest version of the Internet Protocol (IP) solves the problems of limited IPv4 addresses.
- A number of government institutions were given a higher bandwidth of 100 Mbps.
- The procedure for connecting the Federal Computer Crime Unit (FCCU) to the FedMAN network began.
- BELNET was responsible for the connectivity of the Federal Agency for the Safety of the Food Chain (FASFC) while it changed premises.
- The connection of FPS Economy was duplicated.
- BELNET drew up a business case for the forthcoming FedMAN3 network.

THE BELNET NETWORK



Data communication can be carried out via lightpaths over the BELNET network. Lightpaths are direct optical connections between two points without the intervention of routers. High capacity, quality and reliability are the most important advantages.

3.3

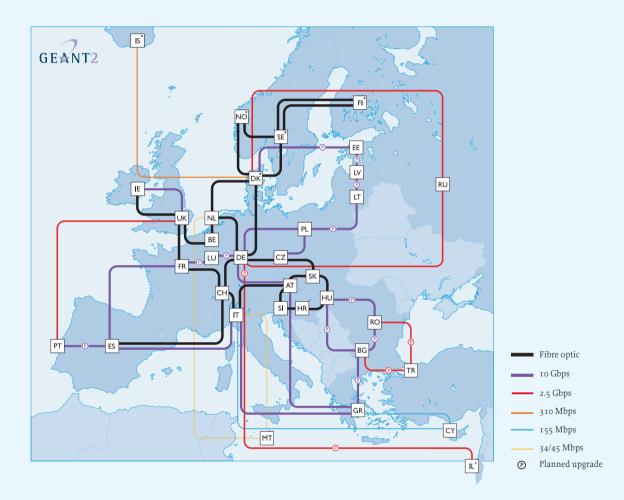
BNIX

The BNIX (Belgian National Internet eXchange) platform is a physical platform which connects the IP networks of Belgian Internet providers, content providers and other companies to one another, enabling the local Internet traffic in our country to run more quickly, securely and economically. BNIX helps BELNET to maintain low rates for its customers. BELNET operates this platform and, in 2009, began updating it to prepare for this, especially so that it can adapt to future developments.

3.4 INTERNATIONAL NETWORK ACCESS AND COOPERATION

The BELNET network is connected to international research networks which promotes international collaboration between educational and research institutions. The BELNET network forms part of the European research network Géant2 and provides access to other research networks such as the American Internet2 network. In addition, BELNET is a member of TERENA, the European association of education and research networks. At the 2009 TERENA Conference, BELNET presented its vision about how to deal with a Network Operations Centre (NOC) and about the procedures of an NOC. This provoked a lot of discussion and led to a possible international NOC Task Force.

THE GÉANT2 NETWORK



The BELNET network is connected to large international research networks. Together they form the Géant2 network. The core of the network comprises multiple 10 Gbps connections. These consist mainly of fibre optic connections.

3.5

FLEMISH SUPERCOMPUTER CENTRE (VSC)

The BELNET network has made new applications possible, such as the Flemish supercomputer, a cluster of computers in different locations which are now linked to one another via our network. The Flemish Supercomputer Centre uses specially allocated 10 Gbit lines via lightpaths. It is a cooperative venture between five Flemish academic associations: K.U.Leuven Association, Ghent University Association, Brussels University Association, Association of Universities and Colleges Antwerp, Association of Universities and Colleges Limburg. The VSC is financed by the Flemish government's department of Economy, Science and Innovation.

3.6

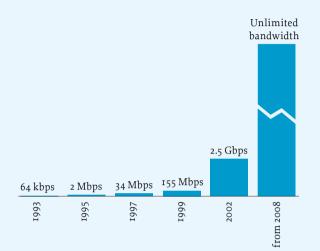
BEGRID

BEgrid is a collection of computer processors (CPUs) which are linked to one another via the BELNET network and which together have huge computing capacity. In 2009, BEgrid comprised 1,016 CPUs. For some experiments, the grid system in the Netherlands can be called into play, which raises the total number of CPUs to 4,952. BELNET delivered the requisite certificates to customers who wanted to make use of the BEgrid computing capacity. In 2009, this was a total of 354.

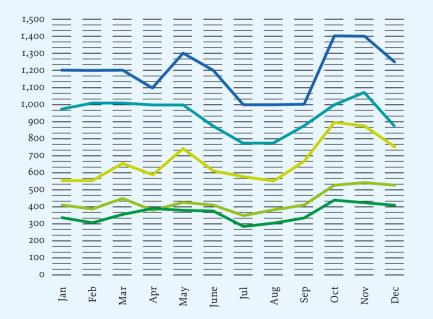
3.7 EUROPEAN GRID INITIATIVE

BELNET has been the Belgian representative at the European Grid Initiative (EGI) since 2009. The EGI is a consortium which brings together European countries which have a grid infrastructure, with the aim of collaborating more across borders. Only one partner per country is allowed.

GROWTH OF BACKBONE BANDWIDTH SINCE 1993



THE BELNET NETWORK, GROWTH OF EXTERNAL TRAFFIC IN TERABYTES (TB) PER MONTH



-	2009
_	2008
-	2007
-	2006
-	2005

Туре	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sı	0	0	0	0	0	0	0	2	0	I	0	0
S2	5	0	4	2	2	4	6	5	16	5	7	4
S ₃	19	9	15	16	16	13	5	6	34	18	16	13
S4	2	I	7	4	2	7	4	7	I	8	8	2
Total	26	10	26	22	20	24	15	20	51	32	31	19

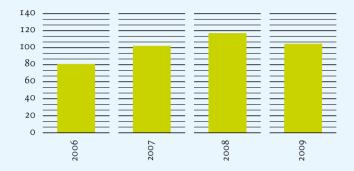
THE BELNET NETWORK - CUSTOMER TROUBLE TICKETS IN 2009

THE BELNET NETWORK - SURVEILLANCE AND FAULT MANAGEMENT

Туре	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sı	0	0	I	I	0	0	0	0	0	0	0	0
S2	18	15	26	20	13	22	II	13	20	10	7	6
S ₃	7	9	12	18	17	19	25	17	IO	20	7	6
S4	4	2	2	I	2	8	4	3	2	IO	2	3
Total	29	26	41	40	32	49	40	33	32	40	16	15

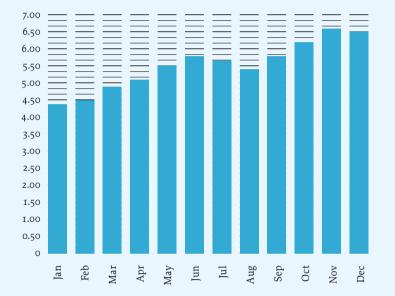
Sı	Complete backbone failures. Points of Presence out of service
S2	Reduced working (with an effect on service delivery)
S3	Problem with the redundancy, without effect on service delivery
S4	Information request

THE FEDMAN NETWORK - NUMBER OF INCIDENTS



THE BNIX NETWORK - NUMBER AND TYPES OF CONNECTION

	2002	2003	2004	2005	2006	2007	2008	2009
100 Mbps Fast Ethernet	47	44	38	32	21	20	13	10
1 Gbps Ethernet	13	20	28	33	41	44	49	46
10 Gbps Ethernet					I	5	7	9
Total number of connections	60	64	66	65	63	69	69	65
Customers			47	46	47	47	44	44



BNIX NETWORK VOLUME IN 2009, IN PETABYTES (PB) PER MONTH

BELNET is moving to new premises in 2010, one of the reasons being to cater for future growth in its workforce.

PARTNERS



A WORD FROM

Herman Moons

HERMAN MOONS

HEAD OF CENTRAL ICT INFRASTRUCTURE, K.U.LEUVEN, ABOUT BELNET

"I was already in touch with BELNET when they were only involved with network infrastructure. At that time, I was responsible for the network at KULeuvenNet. BELNET used to have a short term approach, which concentrated on the technology itself. Today, service and the long-term prevail. Since 2005 especially, when BELNET started to offer services with added value.

Eduroam is a good example. Using the login data of their own institution, this service gives students and researchers access to the networks of other institutions. BELNET's latest project, which is similar to eduroam, is the R&E Federation (research and education). Such a system has been used extensively for some time in the K.U.Leuven Association, and has already proved its usefulness. With their user names and passwords, users from an institution which belongs to the federation gain access to the services of another institution belonging to the federation. So they do not have to register twice or need multiple login data. This project is being rolled out nationally for other organisations and colleges, with BELNET being responsible for the umbrella services.

Another service with added value is the Digital Certificates Service, for certificates which guarantee safe access to websites and Internet services. Previously, for K.U.Leuven, we had to apply for these certificates from bodies such as Globalsign or Verisign. Now BELNET looks after this. It makes our lives much easier, since our university alone holds around 600 of these certificates."





"At BELNET, service and the long-term prevail."

HERMAN MOONS IS RESPONSIBLE FOR K.U.LEUVEN'S DATA CENTRE, NETWORK AND THE CENTRAL IT SYSTEMS.



The Administration, Finance & HR department is responsible for bookkeeping, financial management, personnel recruitment, the follow up and regulation of public tenders, reception and other support functions. The department plays an important role in maintaining the professionalism of BELNET through its various responsibilities, and also ensures that staff work to their full potential by developing staff performance indicators for example.

4.1

4.

DIRECTORS AND MANAGEMENT COMMITTEE

BELNET is led by its director Pierre Bruyère. He is assisted by a management committee. They are responsible for implementing the management plan, the expansion, the investment plan, accounts, rates, public tenders and appointments.

4.2

STAFF

The number of staff has risen from 33 to 39 fulltime equivalents, mainly as a result of the broadening of our services. Staff are employed directly by BELNET (82%), by the Federal Science Policy Office (12%) or through outsourcing (6%). Around 50% are technical personnel. Approximately one-third of our staff are women. There is a nearly even balance of Dutch and French speakers at BELNET. Most staff are under 40 years old (75%) and are employed at level A (77%). The vast majority of staff use public transport to get to work (86%). Approximately 47% of staff work from home 1 day per week, and 31% do so occasionally.

4.3 **PARTNERSHIPS**

BELNET works nationally and internationally with various other organisations in the knowledge and information society.

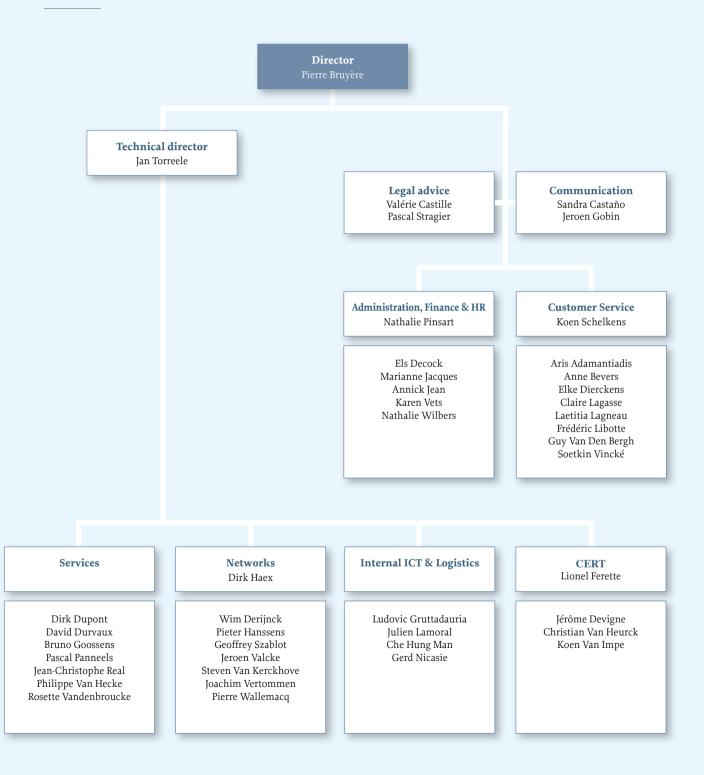
National partners include:

- all Belgian universities, colleges and research centres
- · the Flemish government and the Walloon Region
- Fedict, the Federal Public Service for Information and Communication Technology
- ISPA, the Internet Service Providers Association of Belgium
- DNS Belgium

International partners include:

- DANTE, which looks after Géant2, the European research network
- Euro-IX, the European Internet Exchange Portal
- TERENA, the Trans-European Research and Education Networking Association

THE ORGANIGRAM



		2006	2007	2008	2009
	Communication	1.77	2.57	1.79	2.00
	Customer Service	2.83	4.44	6.25	9.05
	Administration, Finance & HR	3.90	4.51	5.50	6.51
	Legal advice	1.00	1.00	1.13	2.00
	Management	2.00	2.00	2.00	2.00
	Networks	6.50	6.83	6.36	5.76
	Services	5.42	7.21	6.00	6.12
	Internal ICT and Logistics	0.00	0.00	2.00	3.31
	CERT	2.00	1.88	2.00	2.49
	 Total	25.42	30.43	33.04	39.24

THE AVERAGE NUMBER OF EMPLOYEES IN FULL-TIME EQUIVALENTS, PER DEPARTMENT

THE EVOLUTION OF STAFF, IN FULL-TIME EQUIVALENTS



THE MANAGEMENT COMMITTEE



CHAIRPERSON Dominique Fonteyn, director general Research & Applications, FPS Science Policy ¹

VICE-CHAIRPERSON Pierre Bruyère, director, BELNET²

VOTING MEMBERS

ROBERT VAN DE WALLE, general advisor, FPS Science Policy ³ PAUL LAGASSE, professor at the University of Gent YVES DELVAUX, Technology & Operations director, A.S.T.R.I.D. ⁴ JOHAN VAN HELLEPUTTE, vice-president, IMEC HENRI MALCORPS, director of the Royal Meteorological Institute ⁵ MARC ACHEROY, professor at the Royal Military School ⁶

Members with an advisory role

MARIANNE JACQUES, accountant, BELNET PAUL ANNICAERT, general inspector, FPS Finance

Secretary

NATHALIE PINSART, Administration, Finance & HR, BELNET 7

4.4 FINANCIAL RESULTS

The general bookkeeping result shows a positive result of 329,606 euros. Taking annual indexing into account, the operating and equipment grant increased to 8,474,000 euros. The increase in invoiced services is mainly due to a 32% increase in revenue from recurring activities (2,186,000 euros in 2009 compared with 1,654,000 euros in 2008). The increase is also due to the rise in the number of customers, the demand for more bandwidth and for a number of new services. This increase has been partially offset by a significant reduction in the cost of Internet bandwidth, a drop which BELNET has incorporated in its rates. BELNET invoiced an amount of 202,000 euros for the installation of CERT.be and its operation from August 1st 2009. CERT.be was handed over to BELNET by Fedict until the end of 2010, within the context of a collaboration agreement: this agreement is renewable until the end of 2014. Compared with 2008, the costs of services and diverse goods fell. In 2008, BELNET had organised the TERENA Conference: the associated one-off costs fell away in 2009, as did the installation costs for the updated BELNET network which first came into operation in 2008. Costs for the leasing and maintenance of the lines also fell. Personnel costs rose in comparison with the previous year, mainly because of the expansion in the number of staff in the Customer Services, Internal ICT and Logistics, CERT and Services departments.

Despite the rise in the average outstanding balance, revenue fell compared with the previous financial year, reflecting the sharp fall in interest rates in 2009. With an eye to a future increase in costs (mainly for personnel), BELNET decided to add 200,000 euros to the reserve fund.

4.5 BALANCE SHEET

The investments during the 2009 financial year (1,523,000 euros) mainly concerned network equipment and software for the further development of the BELNET research network. Depreciation for the 2009 financial year amounted to 3,911,216 euros, at an annual depreciation rate of 25% for computer infrastructure, 20% for rolling stock and 10% for other capital goods. The largest amount receivable due in no more than one year was a payment of 258,000 euros from the VAT authorities. This amount mainly consisted of VAT recovered from incoming invoices received during the last quarter. External debts due in no more than one year not subject to the accounting system show a rise attributable to invoices received for investments in and the maintenance of the BELNET research network.

BALANCE SHEET, IN EUROS

Assets	Financial year 2008	FINANCIAL YEAR 2009
Tangible fixed assets	6,874,306	4,502,452
External receivables due in no more than one year, not subject to accounting system	336,527	314,472
External receivables due in no more than one year, subject to accounting system	46,424	299,425
Share certificates and treasury certificates	6,193,000	12,693,000
Bank and giro accounts – cash in hand and stamps	3,575,198	360,256
Transitory assets and unallocated amounts	1,021,626	1,009,658
Total assets	18,047,081	19,179,263

LIABILITIES	Financial year 2008	FINANCIAL YEAR 2009
Net assets or Own assets or Net Liabilities	16,618,999	17,148,604
External debts due in no more than one year, not subject to accounting system	638,481	1,564,719
External debts due in no more than one year, subject to accounting system	124,226	91,420
Transitory liabilities and unallocated amounts	665,375	374,520
Total liabilities	18,047,081	19,179,263

PROFIT AND LOSS ACCOUNTS, IN EUROS

Expenditure	Financial year 2008	Financial year 2009
Other use of consumer goods and external services	6,983,534	5,576,346
Increased property and diverse taxes	13,188	13,713
Direct and indirect personnel salaries	1,444,738	1,907,639
Economic depreciation on accommodation expenses, intangible and tangible fixed assets	3,235,387	3,911,216
Transfer of income (expenditure) other than social security payments	64,315	88,226
Capital losses on existing assets and liabilities	9,375	3,075
Additions to reserve fund	0	200,000
General accounting result	-132,359	329,606
Total expenditure	11,618,178	12,029,821

FINANCIAL YEAR 2008 FINANCIAL YEAR 2009

Total income	11,618,178	12,029,821
Deductions from provisions for future risks and charges	0	0
Transfer of income other than taxes and social security allowances	8,406,000	8,474,000
Extraordinary income	30,000	7,105
Interest and other financial income	243,980	49,905
Services invoiced	2,938,198	3,498,811

Income

EXCERPTS FROM THE BUDGETARY ACCOUNT: EXPENDITURE IN THOUSANDS OF EUROS

		2008	2009
	National lines	684	156
	European lines	684	636
	Commercial Internet	614	663
	Maintenance of network equipment and services	3,432	2,428
	Overheads	1,492	1,328
	Salaries	1,285	1,681
	Other investments	2,035	1,523
	FedMAN2 project (including investments)	977	826
	Operation of CERT.be	0	128
	Grant to the reserve fund	0	200
	Total	11,203	9,569

EXCERPTS FROM THE BUDGETARY ACCOUNT: INCOME IN THOUSANDS OF EUROS

		2008	2009
	Grants	8,406	8,474
	Services invoiced	1,654	2,186
	FedMAN2 project	457	812
	Operation of CERT.be	0	202
	Interest	244	50
	Deductions towards provisions and transfer of receipts	695	0
	 Total	11,456	11,724

In 2009 BELNET deployed a whole range of initiatives via its infrastructure and services aimed at supporting secure and effective collaboration in education and research. We have evolved from a network provider into a service supplier which ensures that its customers and users can work well and safely together under any circumstances.

In 2009, we also took on tasks which led us beyond the boundaries of education and research and into the lives of every citizen in the country. CERT.be is the best example of this. The launch of this national security team is encouraging, as it clearly demonstrates how government is taking responsibility for the security of a rapidly evolving knowledge and information society.

Part of our mission is to foster the growth of the knowledge and information society and, with CERT.be and a number of other initiatives, we certainly achieved that in 2009. We will continue along this path in 2010, in order to realise our strategic objectives further.

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