IF'S RISK MANAGEMENT MAGAZINE 04/2021

Risk Consulting

Insights into risk management and loss prevention

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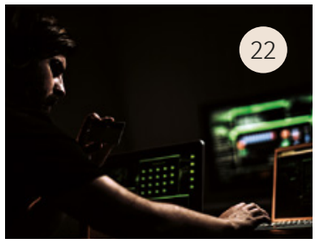

Reader Survey 2021

YOUR FEEDBACK IS APPRECIATED!

This year, the Editorial team of Risk Consulting would like to hear from our subscribers and readers. Please take a few minutes to complete the survey by scanning the QR-code and let us know how we are doing!

Publisher If, Keilasatama 2, 02150 ESPOO, Finland, +358 10 19 15 15, www.if-insurance.com
Editor-in-Chief Kristian Orispää
Project Editor Carita Hämäläinen-Tallgren
Communications Specialist Caroline Bødkerholm
Art Director Ero Tsirika

Production If Creative Agency
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Editorial

Concrete steps for climate action

At the time of writing, we are learning about the outcomes of the Glasgow Climate Change Conference, also known as COP26, in the United Kingdom. It is clear to all, even those of us who were not participating in the event, that the decisions made by leaders at this landmark event will set the course for our future.

Regardless of where you live, the climate will continue to change. The demand for change and concrete measures to mitigate global warming will also only increase in intensity and volume. According to various news sources and organisations, many expected much more from COP26, from their leaders, while others are happy to see that at least some progress was made.

Over the past year, we have been working hard on pushing the agenda for increased sustainability and transparency in If as well. First, by introducing tangible ESG measures to our Underwriting process, intergrating the Ten Principles of the UN Global Compact in our insurance operations and more recently, by joining the Science-Based Targets initiative.

Making such a transition demands that we truly live in accordance with our own values, our ambitions and find the right path forward. To prosper, we really must ask ourselves if there is anything more, we could be doing? We ultimately need to consider; what can we do to support the objectives to make a meaningful contribution to society and the environment. By making specific, fundamental changes in the way we work as an insurance company, we can make a difference. We certainly intend to fight climate change with the tools that we have available.

We also challenge other insurers to take a stand and focus on the greater, common good in their everyday work.

In this issue of Risk Consulting, we will look at flooding in Germany from last summer, as well as rising raw material prices and feature insights into the reasons why ransomware will continue to impact businesses into the future.

Please take a moment to answer our Reader Survey, simply scan the QR code (on the opposing page) to participate. It only takes a few minutes to complete. Thank you to all who have already provided your feedback and comments over the past months.

Poul Steffensen
Head of BA Industrial, If

If P&C Insurance, contact information
Finland: +358 1019 15 15 **Sweden:** +46 771 43 00 00 **Norway:** +47 98 00 24 00 **Denmark:** +45 7012 24 24 **France and Luxembourg:** +33 142 86 00 64
Germany: +49 6102 710 70 **The Netherlands and Belgium:** +31 10 201 00 50 **Great Britain:** +44 20 7984 7600 **Estonia:** +372 6 671 100
Latvia: +371 7 094 777 **Lithuania:** +370 5 210 89 25

If sets ambitious climate targets

Climate change affects us all and the latest climate science sends a clear warning – we must act in order to limit global warming. We believe long-term actions are required from all of us: governments, citizens and corporations.

"This is why we have decided to raise our ambitions and commit to the Science Based Targets initiative and have set ambitious climate goals in line with the Paris Agreement. As the leading insurance company in the Nordics, we hope to set an example that others will follow," says CEO, **Morten Thorsrud**.

Through the SBTI's global standards we will ensure the quality of our sustainability work, so that we contribute to limiting the global temperature rise to 2°C, and preferably 1.5°C.

Scan the QR code below to read the press release

KILIAN MUNCH

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Preparing for the adverse effect of climate change will require a proactive approach. It will become increasingly important to consider the impact of land use, extreme weather, and natural hazards, when assessing regional risks.

Flooding in Germany - a Risk Management perspective

The natural disaster in Germany this summer was a once-in-a-hundred-year event. In this article, we investigate how the flooding developed, the underlaying causes that are currently known, as well as the insurance claims that followed in the aftermath.

By **Caroline Bødkerholm, Ottmar Zeizinger, If**

WHAT HAPPENED?

During 12–17 July 2021, the low-pressure system "BERND" caused extremely heavy rainfalls in some regions of Germany. Peak rainfalls were measured on the 14–15 July in the range of 87 l/m²/2hr to 240 l/m²/22hr. Large areas received downfalls of 150 l/m²/24hr on average over several days.

All precipitation rates were beyond the 100-year recurrence interval (meaning that a flood of this magnitude had a less than 1% chance of happening within any given year). In other words, this was the most devastating flood to hit Germany in many years.

The flash floods and river floods turned small creeks into powerful streams reaching up to 8m water height. The impact of the energy on the ground below resulted in landslides along the flank sides of the hills, and below relatively even surfaces the water impacted the soil structure and resulted in sink holes. The force of the water moved soil and debris like an avalanche through buildings, towns and valleys. Many dams rapidly filled and were subject to overflowing and some dams were at great risk of collapse.

In the beautiful wine valley of the River Ahr, many large buildings, as well as other types of infrastructure, were completely destroyed. The flooding resulted in at least 184 fatalities in Germany and 38 fatalities in Belgium, with many more people injured. In addition, bridges were destroyed, roads and railway tracks were washed away and electric power, water supplies, sewer systems and communication systems were severely impaired.

Ottmar Zeizinger, Risk Engineer at If, followed the development of the flooding notes that, "The evacuation of large living areas, hospitals, the elderly, and homes for mentally and physically challenged individuals, began in the early phase of the disaster. However, what we experienced was that many people did not have a chance to return, either because of limited access to their homes or the fact that their homes or workplaces no longer existed. If the warnings and especially the speed of the evacuations was conducted well enough, is still to be evaluated."

Within three weeks of the disaster, the German government launched a EUR 30 billion relief fund. Some EUR 2 billion from the fund has been dedicated to public infrastructure, such as railway systems.

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WHY DID IT HAPPEN?

There are several reasons why this flood was so devastating, and many reasons still to be assessed are currently considered as 'speculative'. However, it is thought almost certain that the worsening climate crisis caused the devastating rainfall, as it is a simple physical fact that warm air can hold more humidity than colder air.

That said, other variables must also be taken into consideration. They include:

- Soil condition and capacity to drain and hold water is extremely important. The region of Germany worst impacted had experienced significant rainfalls over the previous three weeks. The ground had been saturated and the retention capacity of large soil volumes had already reached their limits before the heavy rainfalls starting on 12 July.
- The ratio of impermeable surface ground (sealing) to open natural ground surface had been continuously increasing up to the time when the heaviest rains began. In 2016, for example, an area the size of approximately 90 football fields (≈640,000 m^2) were used for building construction every day.
- Rivers and impounded reservoirs were already at very high water levels, which further reduced the retention capacity.
- Manmade changes to ground surfaces increased the speed of above ground drainage and provided less time for the water to reach further down the groundwater table.
- Forests had been changed to rapid lumber production sites. This reduced the capacity of the trees (leaves) themselves to retain water, but also allowed faster water flow straight downhill to the rivers.
- Compacting of the soil by heavy farm and forest machinery reduced the "sponge" capabilities of undisturbed soil.

The direct causes can easily be explained by meteorologists. In simple words: very warm and humid air masses built up over the Mediterranean Sea area. In a rotation pattern they moved north and stalled in the western part of Germany. In the same area, the low-level system "BERND" moved away very slowly. In addition, there were saturated cumulus clouds sized 10km in height and 3km in width. This combination, in the same area for a prolonged period of time, resulted in the exceptionally heavy rainfall.

HOW CIVILISATION HAS IMPACTED THE LAND

Historically, flooding has covered larger areas with fewer deaths, but on this occasion 184 lives in Germany were lost. The flooding occurred within the space of a few hours, making evacuation difficult and rapidly leading to it causing a greater destructive impact, which included an increased number of fatalities.

A similar weather-related natural catastrophe happened during the 2013 flooding in Germany. At that time, the rivers Elbe and Danube overran their riverbeds. However, in the flooding of 2021, much smaller rivers had been involved and landslides occurred, which was not the case in 2013.

INSURANCE CLAIMS

The German Insurance Industry Association (GDV) has estimated that following the July 2021 flooding event, there were approximately 250,000 claims, and insured losses ran to EUR 7 billion. On average, 46% of residential buildings are insured against flooding. One single local insurer, 'Provinzial', published estimates of 30,000 claims totalling approximately EUR 1 billion. At the same time, 40 local offices of the insurer itself suffered damage. A few weeks earlier, heavy rainfall and hail caused insured damages of EUR 1.5 billion.

The destroyed infrastructure made communication and on-site inspection of the damage difficult to estimate and insurers are still evaluating the events. It should also be taken into account that the current commodity market conditions relating to construction material scarcity and price rises due to the pandemic (particularly in lumber) could also lead to a demand surge impact.

SUMMARY

Flooding has occurred throughout earth's long history and will continue to occur in the future. The frequency of these events, however, and the impact on society will almost certainly increase. As the risk is very much related to much larger and more complex systems, a meaningful reduction of the climate change impact risks cannot be expected in the near and mid-term future. That said, measures to mitigate short-term and minor impact events can be developed and implemented.

In the case of the flooding caused by the 'BERND' system, Ottmar Zeizinger concludes, "Further on-site analysis, together with experts and local authorities, represent the next step towards implementing better quality risk assessments for the next time a flood occurs in the area." ▭

Fire prevention and management from space

The increasing duration of wildfire seasons and the severity of the fires are problems of increasing global impact and consequent concern. In the search for possible mitigation solutions, remote sensing has become a promising tool for environmental management and preventing forest fires. We discovered how these techniques can help detect, monitor, and mitigate fires.

Forest fires are a determining factor in environmental transformation for a wide variety of global ecosystems. This is because they have a global impact, such as on the balance of greenhouse and regional gases, soil degradation, or the loss of biodiversity. In recent years, there has been an increase in the negative effects of fire due to the sum of natural conditions, human activity, and the impact of global warming, among other factors. This could increase the intensity and duration of wildfire seasons. That's why detection and management components are essential nowadays.

In recent decades, the use of data provided by Earth observation satellites for the prevention and evaluation of forest fires has grown exponentially. Remote sensing models provide meteorological, climatic, and hydrological information to define conditions before, during, and after the fires. Monitoring can be divided into three different procedural phases.

DETERMINATION OF HAZARDOUS CONDITIONS

The role of remote sensing in this first stage of checking risk conditions is particularly focused on the generation of critical variables to estimate ignition and subsequent propagation.

NASA scientists specify that forest fires are the result of a complex relationship between atmospheric and weather conditions and ecosystem processes. In this regard, different studies have indicated that the frequency, spatial extension, and duration of the fires show a close link to the climate variability at the interannual to decadal level.

In the NASA training course "Observations of Satellites and Tools for the Risk, Detection and, Analysis of Fires," it is pointed out that the probability that an area begins to burn is stipulated by collecting relevant factors that influence the sparking and behavior of fires. To this end, detecting certain warmer and drier weather patterns, extensive accumulation of fuels, record air temperatures, or wind speed through satellites is essential in a phase as critical as the prevention or mitigation of fire risks.

Vegetation, due to that fact that it acts as fuel for igniting, propagating, and intensifying the fire, is another factor to be considered in the risk assessment of this type of accident. Its assessment through remote sensing systems provides the opportunity to analyze metrics of such influential factors in this first pre-fire stage, such as typology, health, extension, density, altitude, or humidity.

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Therefore, land coverage and vegetation indices are two of the formulas most used by NASA to identify and determine flammable materials. But they are not the only variables to consider. Analysis of the topography with conclusive components such as elevation, slope, and direction of the slope will also help in the designation of the space that the fire has to maneuver.

NASA indicates that ignitions that originate at the bottom of a slope have more space to expand. In these cases, the heat that precedes the carbonization preheats and dries uphill fuels, contributing to the acceleration of the fire.

Likewise, thanks to remote sensing, barriers capable of slowing the spread can be pinpointed, such as rocky outcrops or lakes.

Some analysis systems, such as Firecast used by NASA in this phase, provide near real-time monitoring products with alerts that include fire hazard specifications within the area of interest, image-mapping showing the risk location, and data to import into Google Earth.

ACTIVE FIRE DETECTION

The process of locating active fires has evolved considerably in recent years. In many territories, fire spotters in lookout towers have given way to detection through satellites thanks to smoke measurements and temperature or light anomalies.

Most active ignition detection methods from satellites are based on the thermal contrast between the unaffected soil and the heat source; they use mid-infrared sensors. However, algorithms designed to detect these thermal anomalies have some limitations. NASA warns that false positives can occur; large fires can go undetected due to high smoke density or smaller ones can fail to be detected.

Furthermore, remote sensing presents other uses thanks to its ability to calculate the aerosol index with information obtained through the selection of spectral bands for smoke detection. It can differentiate between smoke and dust and assign different labels depending on the type (smoke, dust, volcanic ash, clouds, and snow/ice).

Likewise, the optical thickness of aerosols, determined by optical depth, is used by the scientists at the U.S. agency to determine the amount of light removed by dispersion and/or absorption during its travel through a medium, checking the amount of particles present in the atmospheric column (from the surface to the outermost layer of the atmosphere). The value is established in terms of the particle concentration, its size, chemical composition, location in the atmosphere, and the measured wavelength.

All of this data provides significant revelations for air quality verification. We must bear in mind that, as the NASA training course points out, smoke from fires is an important source of trace gases and aerosols or particulate material, representing 50% of global CO_2 emissions, 20% of NOx emissions, 40% of black carbon emissions, and 74% of organic carbon emissions.

> ***The use of data** provided by Earth observation satellites for the prevention and evaluation of forest fires **has grown exponentially.”***

The agency's and other entities' air quality forecasts collaborate in the important task of detecting public health alerts. They also serve as warnings about visibility/haze and to establish the need to temporarily reduce emissions by environmental regulators.

DAMAGE ASSESSMENT

The evolution of forest fires can trigger lasting impacts on human lives and surrounding infrastructure. The release of carbon dioxide and soot particles into the atmosphere with their resulting influence on the climate, modifications in soil chemistry and the immediate reduction of soil fertility, the destruction of vegetation causing increases in runoff and erosion, their impact on the cycling and flow of nutrients, and the destruction of ecosystems and fauna are some of the main impacts NASA describes.

In this regard, water resources are usually one of the resources that are globally most concerning as they are greatly impacted, both in the short and long term. In the first scenario, erosion and runoff resulting from the fire transport sediments, waste, and chemicals to streams, lakes, and reservoirs, directly affecting the quality of drinking water. Meanwhile, in the second scenario, carbonization can alter the characteristics of the hydrographic basins and storm flow patterns.

Monitoring precipitation and runoff helps predict the subsequent risk of water quality deterioration, floods, and landslides.

Forest fires devastate everything in their path, leaving the soil burnt, sterile, and unable to absorb water. As a result, subsequent rainfall and increased runoff can cause sudden floods, debris flows, and even collapses. The risk of flooding remains high until vegetation is restored, which can take up to five years.

NASA underlines how recent literature shows that even rainfall with recurrence intervals of one to two years can cause debris-flow activity. Based on the severity and topography of the burnt area, the evaluation of post-fire debris flows by remote sensing may help calculate the probability of this occurring. These parameters will be used to establish decision limits, which, as the experts point out, must be determined to find the optimal relationship between true- and false-positive occurrences.

Colorado, 2020

California, 2020

California, 2020

Central Idaho, 2013

On the other hand, so as to provide a more favorable perspective, the data obtained from space can also play a part in predicting vegetation growth. At this point, flora indices and soil classifications use images to assess regeneration and condition at various stages following the damage.

This will be done by implementing a pattern of succession that will vary depending on the periods and plant species of each type of forest. Furthermore, the foliage growth mapping allows NASA tools to characterize vegetation based on changes of the dominant type, indicating the presence of new life and detecting new growth.

A WORLD OF POSSIBILITIES

Although the operational use of satellite data in the prevention, detection, and evaluation of fires still has limitations, the abilities of this technique have great potential.

In this way, remote sensing makes it easy to cover large swaths of territory at systematic time intervals, providing a much more comprehensive spatial vision. Furthermore, the recording and transmission of this data is done digitally, enabling its processing through computer equipment and ensuring automatic, rapid, and reasonably objective processing.

Additionally, different systems can easily connect to other spatial databases and generate integrated products. The entire future in the functionality of satellites, as already stated in the article by Nanosatellites: the future of space communication, also takes place in the management and mitigation of fires.

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Rising raw material prices increase the risk of underinsurance

The Nordic region's largest insurance company, If Insurance, is currently looking to insure higher values for its large corporate clients in connection with insurance contract renewals. One key factor behind this can be found in the large price increases in raw materials.

By **Birgitte Ringbæk**, If

When there is a fire in a production facility, or a critical machine breaks down, business operations will cease. Today, rebuilding a facility or repairing business critical machinery can be more expensive, due to recent and substantial price increases in raw materials. This lack of raw materials, which includes e.g. plastic, steel, as well as microchips and electrical components, can lead to longer periods of inactivity.

"Many clients have already seen the raw material shortage impact on their own costs, as prices have risen over the past year especially. However, that does not mean that they also reflect how the company's physical and financial values have also risen. Restoration after a claim can be much more expensive today because the prices of raw materials and materials such as glass, metal and wood have risen significantly throughout most of 2021," explains **Kristine B. Wagner** Head of Underwriting, BA Industrial at If Insurance.

"When we look at the claims we have had recently, there are definitely examples of clients underestimating their own values. The trend is recurring throughout the entire Nordic region, and this is something that clients need to be aware of, to not be underinsured when a major claim occurs," she says.

Underinsurance occurs when the sum stated in the insurance contract does not correspond to the actual value and conditions covered. If the sum is too low, it may ultimately mean that one does not obtain the necessary compensation to re-establish operations after a fire, flood or other extensive damage.

PRICE INCREASES MUST BE RECOGNISED IN THE VALUES

Working together with our clients, If Insurance encourages customers to include the price increases in the valuation when calculating their values.

"Although the values set in the insurance contract are inherently based on an estimate, it can be qualified by either contacting the insurance company's experts or in consultation with suppliers and advisers. You can also buy highly qualified assessments from consulting firms that specialise in this area," says Kristine B. Wagner.

If Insurance regularly undertakes the valuation of buildings, equipment and facilities, but this is not always practically possible on all insurance policies. Therefore, it is normal for clients to value their assets themselves, and then utilise the insurance company to secure a second opinion on the largest total values.

According to Denmark's Business Statistics Tendency Survey, production restrictions have risen to the highest level ever witnessed in industry due to a shortage of materials and equipment. Arguably, the shortage in construction materials has not been greater since the years leading up to the financial crisis.

The price increases are, in part, due to the aftermath of the coronavirus pandemic. Firstly, the demand for building materials in connection with the renovation, conversion and extension of private homes has increased significantly. In addition, the supply of construction products has declined, partly because supply chains have experienced delays in securing materials due to closed ports and borders.

We should talk about intellectual property

While companies usually focus on managing their tangible assets, Intellectual Property (IP) sometimes gets ignored. There are several developments and trends in the market that will continue to have an impact on the IP environment. In this article we shed light on some of them.

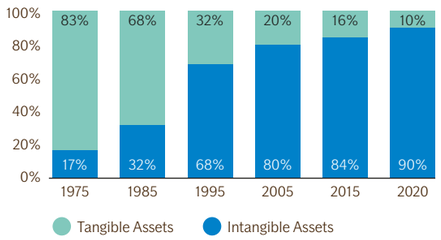
By **Thomas Westerlund**, **Erkki Yli-Juuti**, Condico IP

Some exemplary drivers for the change are the following:

- The pace of innovation has become much faster, and this requires companies to bet on which innovations are short-term improvements, and which are true long-term competitive advantages
- Digitalisation is disrupting most businesses and few companies are immune to this trend
- New business models, including data-driven businesses, requires an understanding of how ecosystems work and how 'control points' get created in an ecosystem
- Control of data may be the most important source of competitive advantage
- Partnerships, which may require the sharing of IP have become more frequent, and sometimes a partner can also be a competitor at the same time

These highlighted drivers of change call for a more careful and thoughtful navigation of the IP environment. A clear majority of companies' asset value is immaterial in nature and companies need to make an educated decision as to how to manage this asset class. The following graph, which is frequently referred to, illustrates the increasing importance of IP.

Tangible vs Intangible value for S&P 500 companies, 2021



Source: Ocean Tomo

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MANY CHANGES ON THE HORIZON

The EU's Trade Secret Directive, which has been implemented in national laws, sets out basic requirements for actions necessary to claim something as a trade secret. Companies need to review their internal processes to ensure that their 'crown jewels', which are assumed to be trade secrets, truly fulfil the legal requirements.

The Unified Patent Court (UPC), a proposed EU-wide court for managing patent matters, has been debated for decades now. There have been some encouraging developments recently, and the UPC may be formally opened at some point in the near future. Companies need to evaluate how this changes their risk and opportunity map. For example, an EU-wide court system could enable so called non-practicing entities to enforce patents more cost-effectively than before.

Companies are becoming more focused on patent quality, as opposed to quantity. In the past, there was a great deal of focus on volume and the filing of statistics was frequently quoted. These days, successful companies take a proactive view on the true defensive and offensive usage scenarios for each patent asset.

We encourage companies to ***think more broadly*** *than just patents when considering IP protection."*

The IP market has become more collaborative in nature, and this has been driven by collaborative business models. Companies need to be open minded and understand that IP rights also need to be shared amongst market actors if a new ecosystem is being developed.

The availability of IPR-related data and Artificial Intelligence (AI) becoming mainstream is offering plenty of possibilities for companies to more cost-effectively gain insights into competitor activities. This opens new doors in terms of competitor intelligence. AI is also offering new models to manage the prosecution process for patenting more effectively.

On a very specific note, there is also an ongoing debate as to whether a computer using AI can be an inventor of a patent or if a human can only be officially recognised as an inventor. The first court rulings are already out, and nations are taking different views on the matter. This debate will likely continue for many years, if not decades, to come.

The financial market is showing an increasing interest in IPR as an asset class (the US in particular) and new service models are constantly being introduced. Currently, there are plenty of alternatives to leverage a solid IPR position to create shareholder value. For example, using IPR as collateral against a loan is a quite normal practice these days.

Investors are also paying more attention to IP. The days have now gone when an investor was satisfied with a company owning a patent. It is becoming more usual that a company now needs to articulate how IP is creating shareholder value when engaged in due diligence, or funding discussions.

SO WHAT, I HAVE A PATENT

Patents, like all assets, have their pros and cons. A patent (or patent portfolio) can be very useful when the 'stars align'. However, some of the observations we have made over the years indicate that the following considerations often get ignored:

- By patenting, companies publish their innovation, and theft is unfortunately quite common. Enforcing a claim against an infringer can be very expensive, involves uncertainties, and it also creates unnecessary management distraction.

- A patent can be effective only if it covers competitor(s) products / solutions (or plans thereof) and not only that of the companies' own product / solution. This is often ignored when considering what patent claims to draft.

We also encourage companies to think more broadly than just patents when considering IP protection. Scandinavian countries continue to score highly in various research publications regarding innovation (e.g. World Intellectual Property Organisation, Global Innovation Index 2021). It is clear that there is a considerable amount of solid R&D happening in the Nordic region. It is also of great importance that companies protect their innovation with adequate IP tools so that the investment made in R&D isn't lost.

NETWORKS ARE INCREASINGLY IMPORTANT

In our experience, it is important for companies to approach IP holistically. Firstly, one needs to understand what makes the company succeed and how it differentiates itself from the competition. And secondly, one needs to consider the environment and the evolution of this environment, including ecosystem actors, value chain, competitors, and market strategy, for example.

Once you have this basic picture, and potential scenarios of how the world might evolve, one can more clearly understand what the right form of protection is. That said, this map will continue to be a moving target and subject to constant change. Therefore, every company should consider its network of partners that assist it in navigating the ever-changing IP environment. ▭

"At If Insurance, we aim to help our clients to grow and succeed in their international ambitions. Thoughtful management of IP risks and opportunities is an important and timely commitment to help achieve this. In Finland, for example, If Insurance and Condico work in cooperation to help our clients manage IP risks and get the most out of their IP to create value and secure their intellectual property," says **Kari Koljonen**, Head of Casualty Underwriting, Finland.

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New ISO Standards for solid biofuels and waste

What measures should be taken into consideration in the safe handling and storage of solid biofuels? And how should If Insurance incorporate best practice standards? In this article, **Henrik Karlsson**, a Risk Engineer at If, shares his knowledge on the new ISO standards and information gathered from conducting surveys.

By **Caroline Bødkerholm** and **Henrik Karlsson**, If

The Research Institute of Sweden (RISE) has developed a series of new ISO standards for Sweden within the area of solid biofuels and waste. These are international industry best practice standards.

ISO STANDARD SEMINAR

To share information about the new ISO standards, a seminar was held in the spring of 2021, with participants from energy and woodworking companies, recycling companies, fire departments, insurance companies, consultant companies, universities and research institutes. In total, the seminar welcomed around 150 participants, all of whom joined online. Henrik Karlsson presented our view as an insurance company on the storage and handling of solid biofuels.

"As an insurance company, we have a strong interest in avoiding any unnecessary losses or interruptions at our insured sites. Therefore, we work closely with our clients to implement routines and technical solutions to reduce risks and prevent losses," says Karlsson.

THE NEW ISO STANDARDS

The new standards for the safe handling and storage of solid biofuels are referred to as ISO 20024, ISO 20049-1 and ISO 21912.

- **The first standard, ISO 20024**, focuses on the "safe handling and storage of solid biofuel pellets in commercial applications. The document provides requirements and guidance on how to handle and store biofuel pellets in an industrial process." *(Source: www.iso.org)*

- **The second standard, ISO 20049-1**, focuses on "how to determine self-heating of pelletised biofuels. It provides a general test procedure for quantification of spontaneous heat generation in biofuel pellets. Spontaneous heat generation is a major risk when storing pellets in bulk and a common cause of fire in pellets." *(Source: www.iso.org)*

- **The third standard, ISO 21912**, focuses on the "safe handling and storage of solid recovered fuels. This standard provides principles and requirements for safe handling, treatment and storage of solid recovered fuels." *(Source: www.iso.org)*

THREE KINDS OF REQUIREMENTS

The requirements for the safe handling and storage of solid biofuels can be divided into three categories, 1) the legal requirements, 2) the insurance requirements, 3) the client's own requirements.

It is imperative to the client's business that the legal requirements are fulfilled. However, the insurance requirements are also significant, as these help guide the implementation of a robust, resilient and safe production site. The insurance requirements are based on industry best practices such as the ISO standards, together with solid experience. Lastly, the clients' own requirements for the site can vary considerably and can sometimes exceed what is required from both legal and insurance standards.

"The new ISO standards within this field are much welcomed, as the legal requirements are often quite limited. Even though you might meet, for example, all the legal requirements on the storage of biofuels, it is not a guarantee that the overall risk level is acceptable. One example is here in Sweden where there is no legally required safety distance between large stacks of biofuels and critical machinery or buildings, which could compromise the business in case of a fire," concludes Karlsson.

As the use of renewable energy is constantly increasing, it is important that the various energy sources are managed and deployed in a safe manner. The Risk Engineers at If insurance are often in dialogue with our clients about how renewable energy sources can be installed and used in safe and reliable ways.

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Why we can't fix the ransomware problem

Five years have passed since the first widespread ransomware incident; the global WannaCry cyberattack.

By **Mikko Peltonen**, If

You may ask, why are we still trying to solve this problem? And why has the cyber-security industry not been able to produce the needed technical solutions that will stop similar ransomware attacks from happening in the future?

One reason is that ransomware is a concept, rather than a single type of attack. It can use any type of attack vector, and any vulnerability in your organisation (whether technical or organisational) to launch an attack against you. Furthermore, in most large-scale ransomware incidents, especially those that make the evening news, the attacks are usually complex, carefully crafted attacks that are tailored for the individual organisation, making use of the weaknesses that exist in that particular organisation. Any sophisticated attack will consist of a chain of events. It is also worth noting, that whatever solutions and tools the 'good guys' have in place to protect themselves; the cybercriminals will also have access to these security measures.

Another issue has come in the form of paid ransoms. As these payments are used to fund more crimes and expands the gangs' operations. Today, cybercriminal gangs have already generated so much wealth that they can invest in hiring experienced software engineers for research and development to further sharpen their weapons.

The third reason is that operating system vendors move slowly and their development is not able to keep up with the criminals. The codebase of a modern operating system has become so extensive that it is risky to change or remove anything at all. Yet, every feature in an operating system increases the attack surface against it, and it is very difficult to ensure there are no security holes in these systems. Worse still, many of these features have been enabled by default, in an effort to make it easier for end users to use their laptops and computers. So, it is left up to the organisations themselves to ensure any undesired functionality is disabled.

The fourth reason is societal - governments have moved slowly in their legislation and regulation. One notable example is the slow progress made with regards to cryptocurrency regulation. For example, cryptocurrency exchanges, which allow criminals to cash in their ransom wins for fiat currencies, are not considered to be financial institutions like banks and insurance companies. This means that such exchanges are thus rarely required to comply with extensive AML/CTF regulations. This notable loophole has made it easy for cybercriminals to operate freely outside of government-controlled institutions and gain considerable wealth.

Fortunately, there is a glimmer of hope, as intergovernmental action has begun to deliver results. A task force led by the US Federal Bureau of Investigations consisting of 20 countries, recently took down the most prevalent ransomware group, REvil. This successful collaboration could be the start of more concerted actions against ransomware gangs.

In conclusion, it is not a good idea to simply rely on the cyber insurer to cover possible ransom demands. Regulators in many countries have taken action, and for instance the OFAC (Office of Foreign Assets Control) of the US Treasury has issued a guideline warning about the potential sanctions they may levy to "anyone facilitating payments to the organised cybercriminals". Effectively, cyber insurance products may have a cover for ransom payments, however they always have a condition that the payment must be legally permissible.

Appointments

Markus Hytönen
Cargo Risk Engineer, Nordic

Johanna Mola
Head of Property UW, Sweden

Mikko Polvi
Cyber Underwriter, Nordic

Karoliina Laine
Network Manager

Sofia Åström
Network Manager

Ville Mäntylä
Cyber Risk Engineer, Nordic

Anders Björklund
Property Risk Engineer, Sweden

Elisa Korniloff
Casualty Underwriter, Finland

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