



The pace of **change** on our planet has accelerated. The framework conditions and requirements that affect society and economy and that extensively influence our lives seem to be changing constantly and, above all, faster than ever before.

Making reliable predictions about the future, however, is becoming increasingly challenging. Thus, it can be of great advantage to notice medium-term future trends early and classify them according to one's own sphere of influence. With the support of trend and future research tools, combined with scientific research methods and expert knowledge, it is possible to analyse changes, trends, and megatrends that are shaping the present and to draw possible conclusions - for the areas of fire and disaster prevention - about the future. Rosenbauer's **innovation and research department** has now been using the tools of trend and future research for many years and publishes its findings in the so-called Rosenbauer Firefighting Trendmap, of which the fifth version is now available.

The Firefighting Trendmap should help readers to critically examine possible future events in order to prepare themselves for future challenges, but also to seize opportunities at an early stage. Environmental changes caused by climate change, emerging global geopolitical conflicts and health impacts, social upheavals, dealing with limited resources, opportunities and risks of the mobility transition, as well as advancing digitalisation, all have their impact on the firefighting and disaster management sector.

The **speed** and **dynamism** with which trends develop have a significant influence on new technologies and the need to adapt habits in everyday and professional life in a short time. In addition, **migration** and the framework conditions set by **politics** have a constant influence on the fire service environment and significantly shape its developments. In particular, recent **global health crises** such as the Corona pandemic and current **geopolitical conflicts** (Ukraine and Taiwan conflict) with their geo-economic effects also pose new challenges for the firefighting and disaster management.

The following pages provide an overview of the individual megatrends, their characteristics and effects. The centrepiece is the map view of the Firefighting Trendmap, which is based on an underground network. In this overview, all **twelve fire service related megatrends** (based on the twelve megatrends of the Zukunftsinstitut) can be discovered. The respective nodes represent significant macro trends that have a major influence on one or more megatrends.



You can find more detailed information on the firefighting trends in the digital Firefighting Trendmap with many explanations and research backgrounds under innovation.rosenbauer.com

Have fun working out the fire service topics that are interesting to you using the Firefighting Trendmap.

Responsible for the future.

Be relevant.

www.rosenbauer.com

Follow us on



FIREFIGHTING TRENDMAP 5.0

FIREFIGHTING TRENDMAP 5.0



Connectivity

Digitalisation, Internet of Things, Artificial Intelligence, Industry 4.0, Smart Products, Big Data – the megatrend “Connectivity” unites many disciplines that essentially pursue the goal of comprehensive networking based on modern internet and communication technologies. This also plays an increasingly important role for fire services. Both in urban areas with well-developed infrastructure as well as in the open country various data from sensors could be used in the future to detect critical changes at an early stage. This is in the interest of early fire detection and predictive maintenance, which supports in protecting resources and avoiding critical technical failures. Smart wearables can be used to increase safety for the emergency personnel, whereby the bring-your-own-device principle is increasingly being used here.

Health

There are a thousand diseases, but there is only one health’ – this old proverb probably shapes society today more than ever before. Not only the health-conscious person as an individual seeks a healthy mind and body. Health is becoming a more essential life issue for society as a whole, affecting a large part of our lives, including those in the fire service. Firefighters increasingly focus on the reduction of stress and on consistent adherence to operational hygiene. Preventive health care and strengthening of mind-body fitness are increasingly important factors for firefighters to be able to withstand mental and physical stress. Digital tools such as smart watches and smart wearables are more and more frequently used to monitor the vital status before, during, and after operations.

Security

Current crises such as the Corona pandemic, the war at Europe’s borders, continental conflicts, the climate crisis, energy shortages, rising inflation, increasing migration flows, etc. are leading to a growing sense of insecurity in our prosperous society and to an increased perception of risks and dangers. The fire brigade, as one of the essential pillars of security, is confronted with more challenges. Sensitivity to the danger of cyber-attacks, for example, will become more important in the future due to increasing networking. Social tensions are unleashed through violence against emergency forces in some hotspot areas. In general, however, intelligent, networked systems can provide more security support, monitor operations, and detect or even reduce errors that are occurring due to increasingly complex operations at an early stage.

Urbanisation

The city will be the place where the majority of people (almost 70% in 2050) will live and where the most pressing issues and problems of society, such as the climate crisis, social justice, work, mobility, etc., will be concentrated. Even though the trend of urban exodus which accelerated during the Corona Crisis has fueled a countermovement to moving into cities, urban space will grow. The densification of cities will increase and buildings will grow visibly in height. This will pose new challenges to emergency services. The Smart City is no longer just a hyped buzzword. Cities are becoming increasingly networked. In the future, emergency services will also benefit from building and infrastructure data. For example, intervention times can be improved by early detection systems or smart traffic control systems.

Neo-Ecology

The megatrend “Neo-Ecology” is marked by the climate crisis and all its accompanying phenomena. As a result of climate change, natural events and extreme weather situations will become more frequent, more severe, and affect larger areas of land than ever before. More wildfires and flood events will require more comprehensive system solutions. Green pressure is creating a new environmental awareness. Fire brigades, for example, are increasingly being prompted to rethink the use of extinguishing agents and energy supply and to reduce pollutants. Rising electricity demand in combination with raw material and energy shortages also mean that blackout scenarios could become reality. Thinking about energy self-sufficient operations centres and alternative mobility is becoming more important.

Gender Shift

The megatrend “Gender Shift” indicates a fundamental change in the classical gender role distribution in our world. Originally gender-specific functions are being broken up and made accessible to all. Equality is also increasingly important in the fire service. With more diversity – including more female firefighters – the requirements for the operation of equipment, vehicle characteristics, tactics, and infrastructure are evolving. The resulting advantages offer a relevant chance for further development for the emergency services. Diversity and complementary competences are the great opportunities of the megatrend “Gender Shift”.



Silver Society

The megatrend “Silver Society” is characterised by demographic change. Society is getting older worldwide and, in addition, people’s life expectancy is increasing. So, many are still active at an older age, which bears both challenges and opportunities for the fire service. Experienced firefighters can remain longer in active service in their phase of “active retirement” and pass on methodical knowledge, which also benefits the younger generations. Also, due to the threat of the decline in the number of new recruits, the so-called Golden Mentors will be an important pillar for maintaining the effectiveness of the task forces. This also imposes requirements on the operation of vehicles and equipment, which must be equally suitable for different generations within a fire brigade. New technologies and support tools can enhance natural physical strength, e.g. when lifting and moving heavy loads.

Mobility

Mour lives is and remains a basic requirement in our mobility mix and alternative drive systems – first and foremost e-mobility – will play a dominant role in road transport, offering many opportunities (efficiency, noise and emission reduction, etc.). This, however, also results in new requirements in the form of e-infrastructure as well as safety risks of battery fires for emergency services. In more and more cities, streets are becoming narrower, with bicycles, pedestrians, public transport, and micro mobiles being given preference over cars. Urban Air Mobility is additionally opening up a new dimension of mobility in the air. Furthermore, mobility increasingly includes robotic systems that can be used as autonomous helpers for situational awareness, for transporting equipment, or for assisting in dangerous firefighting and recovery operations in inhospitable environments.

New Work

The platform economy, digitalisation, and automation have received an enormous boost, especially in the pandemic years, and are shaping the world of work. Work structures such as remote work, crowdsourcing, collaboration, and work-life blending have become an integral part of a successful and functioning corporate culture in more and more companies. Fire brigades are also affected by these developments, which arise from the change from an industrial to a knowledge society. On the one hand, the shortage of skilled workers, the lack of manual skills, and the recruitment of junior staff remain challenges. On the other hand, the new work structures in many places represent an improvement in terms of daytime availability and plannability of volunteers, which is promoted by increasing digitalisation in terms of communication and networking.

Globalisation

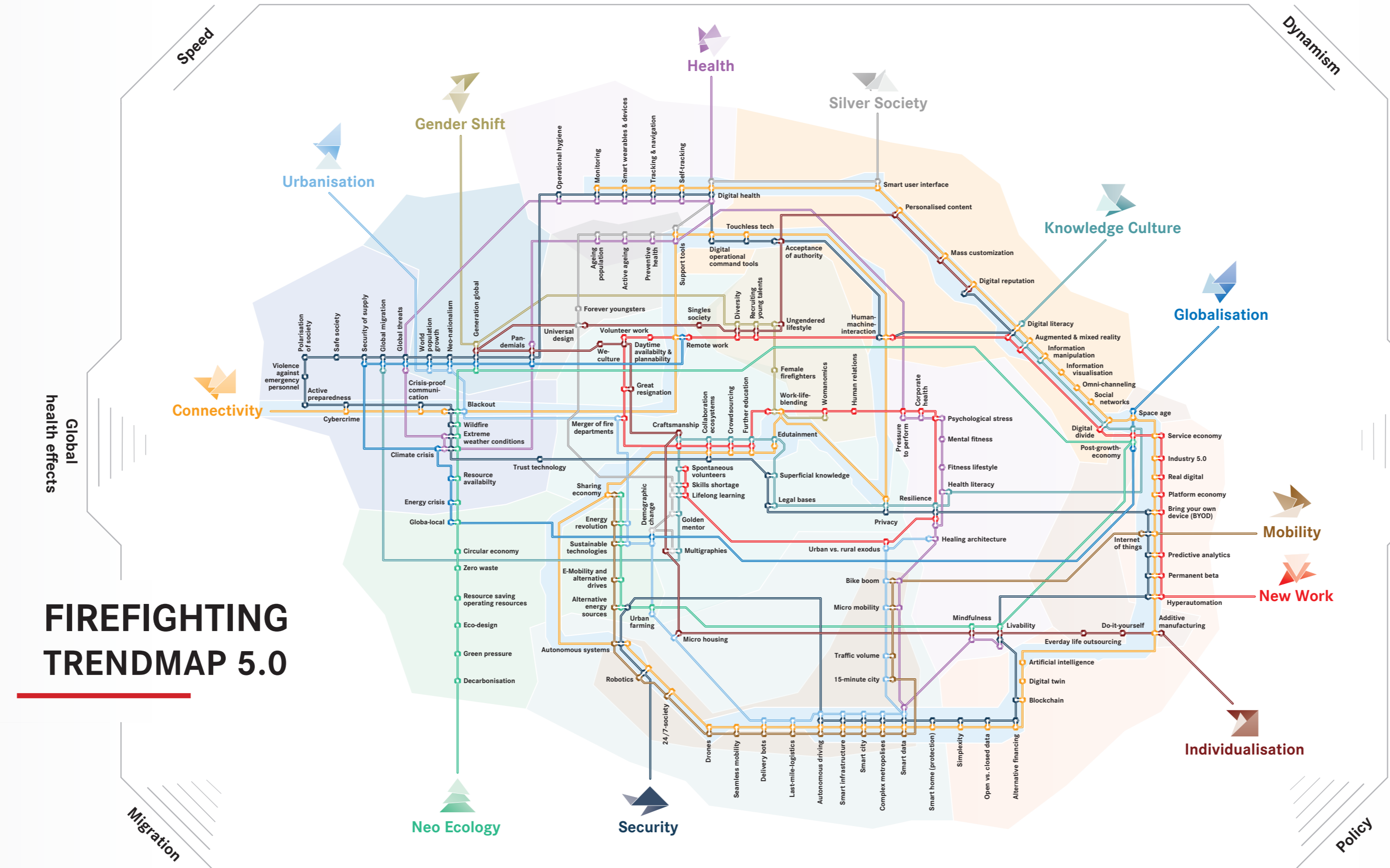
On the one hand, the megatrend “Globalisation” stands for worldwide networking, whose driver is especially civil society with its desire for cross-border openness and acceptance, which campaigns for a better future. On the other hand, international economic and political relations seem to be put to the test more than ever by recent crises such as the Corona pandemic, wars, political tensions, artificially created resource bottlenecks, waves of migration, and national power interests. These dynamic developments have led to an increased focus on regionality and localisation. All this has an indirect influence on the fire service in many respects.

Knowledge culture

More and more people in the world have access to good education. Knowledge is thus becoming a common good, especially thanks to advancing digitalisation and networking. “Knowledge Culture” as a megatrend is characterised by life-long learning and describes how learning and training are also changing for the fire service in the age of information explosion and virtuality. Digital media provides easier access to an ever increasing amount of information, which makes it more challenging to differentiate between facts and fake news. Online and live video broadcasts make it possible to conduct training over greater distances in real time. Virtual training with simulators complements traditional education and training methods. This kind of training can be beneficial in environments with highly complex requirements as well as for environmental and economic reasons.

Individualisation

The megatrend “Individualisation” stands for personal freedom of choice and individual self-determination. People are increasingly striving to follow individual paths in life. As a result, flexible adaptations to individual requirements are more frequently demanded in emergency vehicles, equipment, and other technical systems. This, in turn, is also possible for mass-produced goods through the principle of mass customisation. Individualisation is additionally characterised by a new “we” culture. In general, fire brigades are an essential pillar in our society, where values such as cohesion and cooperation are of great importance.



FIREFIGHTING TRENDMAP 5.0

Rosenbauer International AG/ITR 2023 - Based on the Megatrend Map 2021 of the ZukunftsInstitut and the Trends & Technology Timeline 2010+ by Richard Watson / CC BY-SA 2.5. For a copy of this license, visit <https://creativecommons.org/licenses/by-sa/2.5/>

