



Committed to Research Committed to the Future

<p>BONSEYES <i>Platform for Open Development of Systems of Artificial Intelligence (RIA)</i></p> <p>Programme: H2020 ICT</p> <p>Role: Partner Number: 732204</p>	<p>eCraft2Learn <i>Digital Fabrication and Maker Movement in Education: Making Computer-supported Artefacts from Scratch (RIA)</i></p> <p>Programme: H2020 ICT</p> <p>Role: Partner Number: 731345</p>
<p>FollowMe <i>Living actively and independently at home</i></p> <p>Programme: AAL EU</p> <p>Role: Partner Number: 2015-108</p>	<p>Fem4R&D <i>A Multi-dimensional Programme for Career Development of Female Engineers and Programmers</i></p> <p>Programme: FFG</p> <p>Role: Coordinator Number: 5852700</p>
<p>TAKEDOWN <i>Understand the Dimensions of Organised Crime and Terrorist Networks for Developing Effective and Efficient Security Solutions for First-line-practitioners and Professionals (RIA)</i></p> <p>Programme: H2020 FCT</p> <p>Role: Coordinator Number: 700688</p>	<p>PeaceTraining.eu <i>Strengthening the Capabilities and Training Curricula for Conflict Prevention and Peace Building Personnel with ICT-based Collaboration and Knowledge Approaches (CSA)</i></p> <p>Programme: H2020 BES</p> <p>Role: Coordinator Number: 700583</p>
<p>PROTECTIVE <i>Proactive Risk Management through Improved Cyber Situational Awareness (IA)</i></p> <p>Programme: H2020 DS</p> <p>Role: Partner Number: 700071</p>	<p>ActiveAdvice <i>Decision Support Solutions for Independent Living using an Intelligent AAL Product and Service Cloud</i></p> <p>Programme: AAL EU</p> <p>Role: Coordinator Number: 2015-2-058</p>
<p>FutureTDM <i>Reducing Barriers and Increasing Uptake of Text and Data Mining for Research Environments (CSA)</i></p> <p>Programme: H2020 GARRI</p> <p>Role: Coordinator Number: 665940</p>	<p>iCareCoops <i>Fostering Care Cooperatives in Europe by Building an Innovative Platform with ICT-based and AAL-driven Services</i></p> <p>Programme: AAL EU</p> <p>Role: Coordinator Number: 802030</p>
<p>SciChallenge <i>Next Generation Science Challenges Using Social Media to Make Science Education and Careers Attractive for Young People (RIA)</i></p> <p>Programme: H2020 SEAC</p> <p>Role: Coordinator Number: 665868</p>	<p>IMOPOL+ <i>iMobility and Police: Technologies, Concepts and Solutions for Security Related Deployment Scenarios</i></p> <p>Programme: KIRAS</p> <p>Role: Coordinator Number: 850180</p>
<p>City.Risks <i>Avoiding and Mitigating Safety Risks in Urban Environments (RIA)</i></p> <p>Programme: H2020 FCT</p> <p>Role: Partner Number: 653747</p>	<p>Sicher Social <i>Information and Knowledge Platform for Safe and Secure Handling of Social Media</i></p> <p>Programme: NETIDEE</p> <p>Role: Coordinator Number: 1351</p>
<p>UrbanData2Decide <i>Integrated Data Visualisation and Decision Making Solutions to Forecast and Manage Complex Urban Challenges</i></p> <p>Programme: JPI Urban Europe</p> <p>Role: Coordinator Number: 847511</p>	<p>TAALXONOMY <i>Development of a Feasible Taxonomy for Efficient Classification of Active & Assisted Living (AAL) Products and Services</i></p> <p>Programme: BENEFIT</p> <p>Role: Coordinator Number: 846232</p>
<p>Graffolution <i>Awareness and Prevention Solutions against Graffiti Vandalism in Public Areas and Transport (CSA)</i></p> <p>Programme: FP7 SEC</p> <p>Role: Coordinator Number: 608152</p>	<p>Social Media Crime <i>Structured Analysis and Characterization of Criminal Activities in Social Media and Deduction of a Crime Pattern Classification</i></p> <p>Programme: KIRAS</p> <p>Role: Coordinator Number: 840799</p>
<p>OpenDataMonitor <i>Monitoring, Analysis and Visualisation of Open Data Catalogues, Hubs and Repositories (CA)</i></p> <p>Programme: FP7 ICT</p> <p>Role: Coordinator Number: 611988</p>	<p>SmartCareBase <i>Web-based Information and Collaboration Platform to Support Independent Living of Elderly People</i></p> <p>Programme: BENEFIT</p> <p>Role: Coordinator Number: 840699</p>
<p>UniteEurope <i>Social Media Analytics and Decision Support Tools Enabling Sustainable Integration Policies and Measures (RP)</i></p> <p>Programme: FP7 ICT</p> <p>Role: Partner Number: 288308</p>	<p>SMD4Austria <i>Social Media Services and Mobile Applications for Security and Prevention in Austria</i></p> <p>Programme: KIRAS</p> <p>Role: Partner Number: 836317</p>

Research

Interdisciplinary Expertise for Strong Insights.

At SYNNO we focus on the intersection between Information and Communication Technologies (ICT) and society to provide smart solutions to citizens, consumers and decision makers. Our team consists of highly motivated employees specialized in various technical fields, including software engineering, social media analytics and information visualization. This technical expertise is applied to tackle contemporary societal challenges in various disciplines such as big/open data research, smart technologies, web entrepreneurship, citizen inclusion, and urban security.

Understanding society, processes of social, cultural, economic and political change and social phenomena in general, are indispensable prerequisites for identifying technological demands as well as for designing and implementing new technologies. Therefore, SYNNO connects available data to a wide array of research fields from which valuable insights into issues of societal relevance can be deduced and for example social inclusion of marginalised groups can be fostered.

Instead focusing on particular area in regards to ICT and society, SYNNO assigns great importance to interdisciplinarity and considers the whole range of social and technological research, which enables to view and analyse issues of interest from various perspectives.

Areas and Expertise

- + ICT for Society and Future Tech
 - + Open, Big and Social Data
 - + Information Visualisation
-

- + iSafety and Security
 - + Mobility and Transport
 - + Energy and Environment
-

- + Social Sciences and RRI
 - + Urban Future and Smart Cities
 - + Smart Health and Assisted Living
-



The research team at SYNYO addresses all steps of research including initial problem definition and conception, through rigorous qualitative and quantitative analyses, and technical implementation. The research themes at SYNYO include among others:

Data Analytics and Information Visualization

Interpreting, understanding and unlocking the intrinsic value in extremely large volumes of data or so called Big Data is at the forefront of innovation. SYNYO specializes in the design and implementation of interactive platforms that aggregate big and openly available data from various disciplines and sources. With expertise in informatics and data structures, SYNYO delivers sophisticated data analytical tools for not only businesses but also policy makers and society as a whole. The research and development team at SYNYO concentrates on developing unique metrics and intuitive visualisations of data analytics for decision support.



Social Software and Collaborative Web Platforms

Understanding social, cultural, economic and political dynamics within a society are indispensable prerequisites for identifying technological demands, and for implementing inventive solutions. Innovative technologies and web services have changed the web-user from a passive information consumer to an active contributor. As such, the staff at SYNYO specialize in the development of user-friendly platforms that aggregate such contributed information via social media and big data hubs. SYNYO provides state of the art tools for decision-makers, businesses and citizens to understand the immense possibilities of such new channels of communication. Using techniques such as text mining and emotion detection algorithms, the team at SYNYO uncovers the vast potential of social media data to deliver policy shaping solutions. With expertise in technological sociology, SYNYO concentrates social collaborative platforms to improve approaches to social innovation, entrepreneurship, crowdsourcing and youth engagement.

Security and Urban Governance

Being a complex theme, urban security can be considered in the context of various issues, such as natural disasters, major events, protest movements, emergencies, potential terrorist attacks or petty crimes. At SYNYO, security research combines both, the social research and the technological implementation. SYNYO is not only interested in the threats within social media, but also the capacities of social media and big data analytics for serving security and community governance. With expertise in criminology and technological sociology, SYNYO also concentrates on developing user-friendly platforms providing strategic foresight and proactive management for law enforcement agencies.



Smart Technologies and Digital Future

The data infrastructure of urban transport, energy and water, networks will become the important nervous systems of smart cities. SYNYO sees the future challenges of smart cities as an opportunity for the development and implementation of a variety of new and innovative potentials that will not only increase the quality of life, but also enable sustainable economic growth. SYNYO is pushing forward the societal uptake of modern ICT-based solutions in the fields of transportation, and intelligent mobility.



Integrated Care and Ambient Assisted Living

Due to inevitable demographic developments, dignified ageing and care giving will become an ever more relevant topic in the long-term future with large-scale social implications. In this respect, SYNYO has done much work to strengthen and enable the elderly with the help of ambient assisted living systems to continue an autonomous, healthy and safe life. SYNYO has focused on in-depth research on structured categorization and comparability of the abundance of innovative ICT-based products and services in the field of Ambient Assisted Living.

Development

Technical Excellence for Smart Solutions.

Modern software solutions require knowhow in more than one technology to be effective. At SYNNO, we have the skills and knowledge to turn your idea into a project which will include all the technologies needed and which will meet the highest standards in your industry. We offer the best realization of your project with the implementation of the latest and most advanced technologies.

Our experience in different business areas allows us to suggest the technologies that work best for your research project and business. We are here to listen to your requirements and provide best of breed solution for your particular web and mobile application to create something outstanding across you (research and industry) sector.

SYNNO evaluates user requirements and transfers them to comprehensive use cases which drive both design conception and technical implementation activities. Our digital solutions help turn ideas into the actions required to mobilize individual and collective engagement for the co-creation of a sustainable future.

Software Engineering Expertise

+ Requirement Analysis

+ Use Case Definition

+ Architecture Design

+ Database Modeling

+ Implementation

+ Usability Engineering

+ Application Testing

+ End User Validation

+ Software Pilot Studies



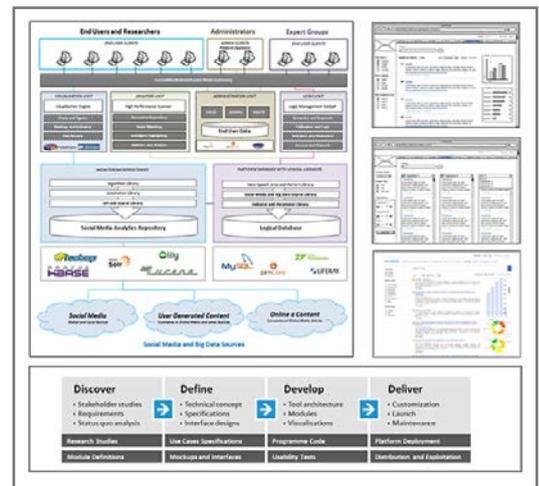
SYNYO’s enthusiastic research engineers and software developers deliver high-quality, customized solutions to tackle emerging societal challenges and provide useful applications for various stakeholders. SYNYO supports innovative projects along the whole development cycle focusing on high standards including end-user-driven methodologies as well as state of the art technologies and frameworks. The following areas are covered by the development team of SYNYO:

Requirements Engineering and Use Case Specification

SYNYO’s software projects are based on a profound requirements analysis and negotiation approach, which helps to address the specific needs of the clients and the end-users. In order to refine the specifications collected within this phase, we strategically employ various quality assurance techniques (i.e. expert surveys) in all stages of our projects. To uphold consistent high quality standards, SYNYO emphasizes thorough and iterative communication techniques between all partners during the stages of requirements engineering.

System Modeling and Application Design

SYNYO creates powerful and flexible architectures using state of the art technologies. This philosophy is applicable to all parts of our development and starts at the persistence layer in which we not only work with proven relational database solutions like MySQL or PostgreSQL, but also with new, innovative approaches to store and process an extremely high amount of data like NoSQL databases (MongoDB, CouchDB) or scalable, distributed frameworks respectively solutions like Hadoop or HBase. This future oriented approach continues in the conception of the business layer of our platforms in which we work with the newest web application frameworks (Yii, Laravel, Symfony, Zend, Django) in order to increase the productivity in the development. Besides the development of customized applications completely from scratch, we also work with established CMS solutions and adapt those solutions to the specific needs of our partners.

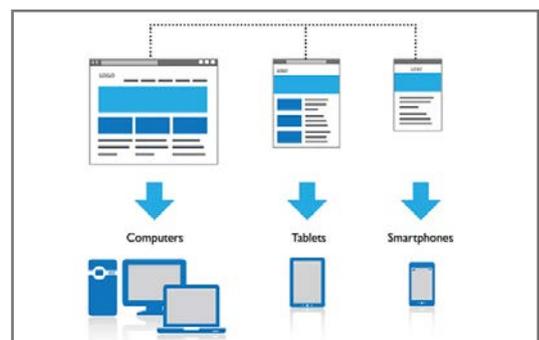


Programming and Usability Engineering

SYNYO evaluates user requirements and transfers them to comprehensive use cases which drive both design conception and technical implementation activities. SYNYO’s broad experience in the fields of interface design, prototyping and mockuping allows the quick creation of sophisticated yet intuitive applications. Extensive knowledge on human-computer interaction as well as user experiences testing complete the usability engineering package. Our quality throughout the whole software development life-cycle is overseen by an insightful project management system. Through the use of agile and lean software process models (Scrum, Kanban) we are able to increase software development flexibility, while addressing partners’ requirements. By using new advances in web technologies like HTML5 and CSS3 in combination with powerful JavaScript libraries like jQuery, our developers are able to provide rich user interfaces. Due to the implementation of responsive design features, our web-based platforms and apps can be used with all modern devices featuring different screen sizes (computers, tablets, and smartphones) including easy and clean interfaces.

Testing and Validation

In order to provide high quality software we place a strong focus on quality assurance during the testing of our applications. Techniques like Continuous Integration and Automated Testing help to incorporate the evaluation process into our software development life-cycle. This implies that our applications are tested and functional at any given time of the project. Additionally to automate testing principles, we validate our products through the opinion of end-users via user acceptance tests. Due to this approach we can integrate real-life experiences into our projects and therefore increase the overall quality of our software as well as of our services.



Advisory

Customised Services for Project Success.

The team at SYNYO has invaluable experience in managing and coordinating research and development projects at national and European level. The primary goal of our project managers, dissemination specialists and researchers is to partner with collaborators and clients to deliver strong value and support to their projects.

Particularly international project proposals often require the composition of a large topic-attuned consortium including research, development and demonstration partners, as for example from academia, industry, NGOs public authorities and law enforcement agencies. SYNYO supports you in consortium construction activities such as structured scoping for potential partners establishing contacts, and clarifying content-related, financial and administrative questions.

Besides scientific and technical reports funding agencies generally require transparent, comprehensible and accurate financial and administrative reporting. SYNYO advises on the elaboration of respective project documentations and therewith contributes to the successful operational management of your research or development project.

Project Support Services

+ Consortium Building

+ Proposal Writing

+ Project Management

+ Research Marketing

+ Project Websites

+ Social Media Channels

+ Quality Assurance

+ Exploitation Strategies

+ Financial Reporting



Combining our existing experience within the research landscape we help other project consortia and organizations to run successful projects. Our advisory services are delivered by a motivated team of experts supported by proven methodologies, best practices and modern tools. We focus on building long-term relationships with our clients based on trust and our commitment to deliver high quality solutions. The primary goal of our project managers, dissemination specialists and researchers is to partner with our research-oriented clients to deliver a strong value to their organizations and projects by providing the following services:

Consortium Building and Proposal Creation

Particularly international project proposals often require the composition of a large topic-attuned consortium including research, development and demonstration partners, as for example from academia, industry, NGOs or city administrations. SYNYO supports you in consortium construction activities such as structured scoping for potential partners, establishing contacts, and clarifying content-related, financial and administrative questions. Furthermore SYNYO provides you with efficient proposal management and helps to systematically elaborate and create national and international projects and funding proposals.

Project Management and Quality Assurance

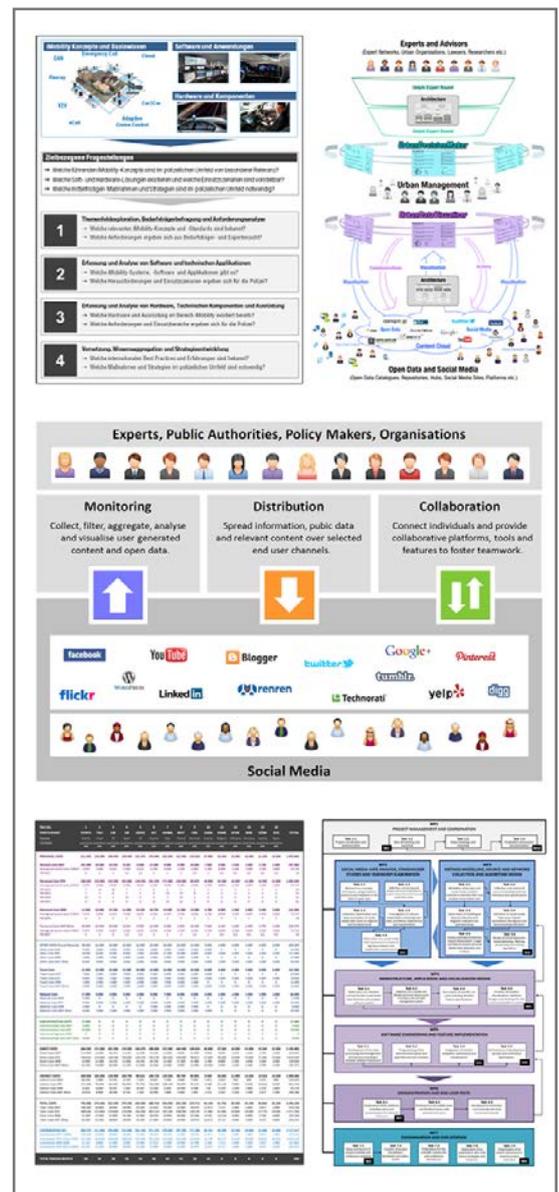
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Dissemination Activities and Project Marketing

Besides management services SYNYO provides the setup of professional project websites, the creation of project newsletters, factsheets, policy briefs, or user manuals for its partners. Additionally, the setup and maintenance of social media appearances are main aspects for successful knowledge and technology transfer within your project. Together with you, SYNYO plans all dissemination and project marketing activities and therewith supports you to appropriately implement the respective strategy defined in your project proposal.

Scientific Publishing and Financial Reporting

The frequent delivery of scientific and technical reports and consequently informing funding agencies about the project status is an integral part of research and development projects. SYNYO provides you with comprehensive support regarding scientific reporting, including technical reports, the presentation of social-scientific research and the elaboration of literature investigations and reviews. Besides scientific and technical reports funding agencies generally require transparent, comprehensible and accurate financial and administrative reporting. SYNYO advises on the elaboration of respective project documentations and therewith contributes to the successful operational management of your research or development project.



SELECTED RESEARCH PROJECTS

TAKEDOWN

Understand the Dimensions of Organised Crime and Terrorist Networks for Developing Effective and Efficient Security Solutions for First-line-practitioners and Professionals



Organized Crime and Terrorist Networks (OC/TN) are a major challenge for the European Union and many different stakeholder groups are involved in creating awareness, preventing, identifying and intervene in case of risk or threat. But in order to develop better strategies and instruments, we still need a deeper understanding of these phenomena. TAKEDOWN therefore aims at generating such novel insights on OC/TN. In order to meet this challenge and to investigate this complex field of research a multidimensional modelling approach is used. The resulting, proprietary **TAKEDOWN Model describes social, psychological, economic aspects as well as further dimensions, activities and response approaches**. A comprehensive empirical research combined with **European and international expert knowledge** ensures a valid and intuitive model.

The TAKEDOWN Open Information Hub targets first-line-practitioners and provides modular solutions and inductive materials. The public web platform helps individuals to navigate to the right third party reporting and help lines including an innovative crowd reporting application to report digital OC/TN cases.

The TAKEDOWN Professional Solution Platform consists of various modules for law enforcement and homeland security departments. Designed with a flexible Platform as a Service (PaaS) architecture it combines knowledge materials and digital security solutions. Via the TAKEDOWN Security Dashboard information streams of native and third party applications are combined in an identification and issue management cockpit. The **TAKEDOWN Professional Advisor supports experts on the selection of relevant approaches and security solutions to tackle OC/TN**. With this multi-level approach, TAKEDOWN will force a better understanding of OC/TN, develop modern approaches and solutions, and will finally lead to a more efficient and effective response on OC/TN and strengthen social cohesion at pan-European level.

PeaceTraining.eu

Strengthening the Capabilities and Training Curricula of Conflict Prevention and Peace Building Personnel with ICT-Based Collaboration and Knowledge Approaches



Political conflicts have long since gone beyond national borders and peace building has become central to the self-conception of the European Union as a foreign policy actor. Current challenges in Conflict Prevention and Peace Building (CPPB) trainings are that many programmes on offer are both too general/narrow, they are not applicable enough, weak on concrete skills enlargement and moreover training alone is not sufficient. Overcoming these challenges requires novel CPPB training curricula and linked activities. PeaceTraining.eu aims to analyse these issues with strong involvement of all relevant stakeholders to take into account current practices and provide **new training methods for CPPB personnel**. In order to meet these challenges and to investigate this complex field of research a multidimensional modelling approach is used. The resulting, proprietary PeaceTraining.eu Cube Model describes curricula structures including stakeholders, new methods, course structures, techniques as well as further aspects, e-approaches, tools and entities.

The PeaceTraining.eu Web Platform (www.peacetraining.eu) features a knowledge base, stakeholder maps, expert navigators, infographics, best practice libraries, and digital guidebooks to strengthen the information transfer among all project developments and future implementations. Additional **Training Curricula Setup Utilities and Search Tools for training centres and trainers** are provided through the project. Thus, PeaceTraining.eu increases awareness on the topic and also attracts secondary target groups including training course provider, educational institutions and trainers because of its sustainable strategy with long-term mobilisation and engagement activities including an International PeaceTraining.eu Symposium.

On a European scale, PeaceTraining.eu will deliver new CPPB training methods and curricula and serve as a one-stop resource to increase efficiency and reduce costs.

SYNYO GmbH

RESEARCH // DEVELOPMENT // ADVISORY

SYNYO

PROTECTIVE

Proactive Risk Management through Improved Cyber Situational Awareness



PROTECTIVE is designed to improve organizations' ongoing awareness of the risk posed to its business by cyber security attacks. The project makes two key contributions to achieve this enhanced situational awareness. Firstly it **increases the computer security incident response team's (CSIRT) threat awareness** through improved security monitoring and increased sharing of threat intelligence between organizations within a community. Secondly it **ranks critical alerts based on the potential damage the attack can inflict on the threatened assets** and hence to the organizations' business. High impact alerts that target important hosts will have a higher priority than other alerts. Through the combination of these two measures organizations are better prepared to handle incoming attacks, malware outbreaks and other security problems and to guide the development of the prevention and remediation processes.

The PROTECTIVE system is designed to **provide solutions for public domain CSIRTs and SME's** who both have needs outside the mainstream of cyber security solution provision. Public CSIRTs needs arise in part because commercial tools do not address their unique requirements. This has created a shortfall, clearly articulated by ENISA, of tools with the required analytical and visualization capabilities to enable public CSIRTs provide optimized services to their constituency. SME's also are vulnerable to cybercrime as they have limited resources to protect themselves and often a limited understanding of what needs to be done. Two pilots will be conducted to evaluate and validate the PROTECTIVE outcomes with CSIRTs from 3 National Research and Educational Networks (NRENs) and with SMEs via a managed security service provider (MSSP).

The PROTECTIVE consortium is constituted of 3 NRENs, 3 academic and four commercial partners from 8 countries so as to maximize the technical and commercial impact of the outputs and the dissemination and uptake of the results.

ActiveAdvice

Decision Support Solutions for Independent Living using an Intelligent AAL Product and Service Cloud



The ActiveAdvice project aims to **deliver a fully functional ICT environment with specific web and mobile services for older adults and their relatives**, for **professionals in inclusive design and construction engineering across Europe**, as well as for **governments and municipalities involved in Active and Assisted Living (AAL)**. The ICT environment offers a holistic market overview, presenting regional, national and international AAL products and services in accordance with the needs of the end users, and combines it with a strong and integrated focus on the target market.

Tackling the shortcomings of a web platform, providing an overview of the AAL ecosystem and supporting informed decision making, the **ActiveAdvice project aims to create an active advising and decision-support network across Europe**. This is supported by a **comprehensive ICT-based environment**, presenting a broad state-of-the art collection on available **AAL services and technologies offered at regional, national and international levels, which are stored in an Intelligent AAL Product & Service Cloud**. Throughout the project extensive end user studies are carried out building the basis for the conception and implementation of services models for costumers, be it older adults and their relatives (target group AAL2C), businesses (AAL2B) or government (AAL2G). Iterative user feedback and usability testing as well as human advisor certification across all consortium countries will ensure the quality of the ActiveAdvice environment while increasing the uptake of AAL and establishing a European network of Authorized Active Advisors.

City.Risks

Avoiding and Mitigating Safety Risks in Urban Environments



The main objective of the **City.Risks project is to increase the perception of security of citizens in cities by activating in a more transparent and sustainable way their participation in communities**, through which information and interventions can be provided both to proactively protect citizens from falling victims to criminal activities as well as to reactively provide more timely and effective response and assistance. In order to do so, the **City.Risks project will leverage a set of innovative technologies, city infrastructures, and available data sources**, but more importantly will aim at making the citizens' smart phones the modern tool for increasing their personal and collective sense of security. The project will design and develop an innovative ecosystem of mobile services that will transform the smart phone or the tablet of the citizen into a tool that will collect, visualise and share safety-critical information with the appropriate authorities and communities. The project will rely on a wide spectrum of available technologies to design and implement an interactive framework among authorities and citizens through mobile applications that will allow in a collaboratively way to prevent or mitigate the impact of crime incidents or other security threats. **Thus, it will contribute to an increase of the citizens' perception of security, which will be measured and validated in real-life scenarios and conditions through the deployment and operation of pilot trials at several selected cities by the project partners.**

Graffolution

Awareness and Prevention Solutions against Graffiti Vandalism in Public Areas and Transport



Graffolution seeks to counteract the increase of graffiti vandalism in public areas and transportation networks by focusing on smart awareness and positive prevention solutions for all affected stakeholder groups, including those who have utilised street art as part of city regeneration and placemaking strategies. The project will work to deliver an extensive set of "Collaborative Tools and Resources" that would include:

- a secure space for duty holders, with cases studies and other methods of evidencing successful practice, to empower city administrations, public transport services and law enforcement agencies, to share knowledge and more widely promote best practices
- an interactive "Open Information Hub" addressing local communities, citizens and sprayers to strengthen public awareness and enforce the prevention of illegal spraying activities, using effectual tools and visualisations.

iCareCoops

Fostering Care Cooperatives in Europe by Building an Innovative Platform with ICT-Based and AAL-Driven Services



iCareCoops is a new, ambitious 2-year project funded by the AAL Programme, that tackles the increasing demand for elderly care at a time of limited resources. Eight partners from seven European countries create novel ICT-driven solutions to empower carers and elderly people to extend the time they can live in their preferred environment by facilitating the cooperative model. iCareCoops is designed as a three-level-concept with information, cooperative, and, AAL-driven service levels. These intelligent, interactive, and inclusive services will be developed with deep end-user involvement and will be provided via a powerful web-based platform, a mobile app, and an Open API.

Social Media Crime

Structured Analysis and Characterization of Criminal Activities in Social Media and Deduction of a Crime Pattern classification



The rapid rise of social media (e.g. micro-blogs such as Twitter, social networks such as Facebook, video sharing portals such as Youtube), and subsequent user interaction, have led to the spread of criminal activities within such platforms. Besides well-known offences such as fraud also new criminal dimensions have appeared since the advent of this kind of communication technology. For instance, the public incitement of thousands of people to commit a crime (so called crime mobs) or the usage of a multiple fake identities to collect sensitive or confidential information from private persons as well as from companies are only two examples of steadily evolving crime phenomena. Additional examples include cyber grooming, profile cloning, social engineering, social phishing, cyber stalking and many more.

Due to these circumstances and the high dynamics of social media crimes, police departments and legal actors in charge face new challenges in handling respective cybercrime-related phenomena in a structured and systematic way. Therefore, a structured and case-related treatment and analysis of social media crimes and respective phenomena is urgently needed, but does not exist yet, within Austria or internationally.

The project “Social Media Crime” aims at supporting stakeholders, first and foremost the Austrian Federal Ministry for the Interior (BM.I) including the Federal Crime Police Office (.BK) as a member of the project team, with a scientifically sound, case-related and practice-oriented, structured, interactive and flexible grid for the systematic classification and evaluation of social media crimes, which as a next step can facilitate the drafting of social media crime laws. Completing the consortium is the Austrian Center for Law Enforcement Sciences (ALES), which provides comprehensive legal expertise. Systematic literature reviews and in-depth requirements studies using qualitative interview guides with relevant stakeholders, as well as with other experts (e.g. security researchers, experts in the field of cybercrime, legal experts and international stakeholders), will be conducted. The project will result in a comprehensive taxonomy of social media crimes and related phenomena, respective practice-oriented and intuitive resources for stakeholders, knowledge about best practices, strategies and methods to prevent and counteract social media crimes, a sound legal evaluation including recommendations for legislation and an interactive collection of cases with the possibility to include new cases and relevant phenomena.

Unite Europe

Social Media Analytics and Decision Support Tools Enabling Sustainable Integration Policies and Measures



The integration of third-country nationals is one of the most important topics for governments and policy makers in the European Union and has risen in prominence on the agenda because it is seen as one of the most visible challenges of globalization. **UniteEurope aims at building scalable and flexible Social Media monitoring and decision support tools enabling sustainable integration policies and measures.**

After the collection of citizen generated content and mass data related to integration issues out of Social Media and already existing participation platforms an intelligent filter and aggregation architecture delivers relevant information for policy makers. An integration issue grid model with multi-layer logic patterns is used for consistent categorisation of relevant integration areas (e.g. education, business, culture) in cities. Coherent layers with multilingual semantic tags, significant sources and parameters are used for the logical core of the tool. Supported with information on web-based dashboards with intuitive visualisations, local decision makers can initiate effective and efficient integration measures and policies. An integrated decision support system suggests adequate measures in case of critical integration issues. Users of the UniteEurope tool can save, monitor and track specific cases to measure impacts and to predict the effect of future decisions.

Additionally, identified target groups and policy makers at European level are provided with aggregated data and key figures to monitor urban integration in Europe and identify good practices for specific areas of integration. **UniteEurope supports operational integration measures and strategic policy development at regional and pan-European level.**

The UniteEurope team consists of system architects, software developers, E-Government, Social Media and integration experts from leading universities, competence centres, companies and three European cities considering integration an agenda priority.

Open Data Monitor

Monitoring, Analysis and Visualisation of Open Data Catalogues, Hubs and Repositories



OpenDataMonitor brings open datasets to light. As a platform, it **gives visitors an overview of available open data resources, allowing them to analyse and visualise existing data catalogues using innovative technologies. The framework harvests datasets, collecting metadata from diverse open data sources. The harvested metadata is then harmonised, in that the gathered information is structured and processed.** Scalable analytical and visualisation methods allow end users to learn more about the composition of regional, national or pan-European open data repositories. For example, the aggregation of catalogues of one region or country can be easily visualised to draw an exact picture of the open data situation and allow comparison to other areas. Analysing and visualising metadata will reveal hidden potential and essential insights from existing resources and identify gaps where additional open data are needed.

One of OpenDataMonitor's main goals is to research and develop a harmonisation scheme and methodologies for addressing the diverse, largely interoperable and multilingual metadata available for open datasets. This will help us to analyse the harvested metadata consistently and understand open datasets better. In this context, we will concentrate on the following: metadata schemas (e.g. DC, CKAN, INSPIRE, ISO), vocabularies (e.g. GEMET), thematic domains, code lists (e.g. EuroStat), publisher taxonomies (e.g. public bodies, publisher roles), licensing (e.g. local vs. international licenses). Our work will be based exclusively on open standards, with emphasis on those formally adopted by the European Commission (e.g. INSPIRE, DC, DCAT). In the OpenDataMonitor project we will adopt CKAN as the underlying software architecture within which all our software contributions will be integrated as plug-ins. This will help make sure the platform is available to a wide population.

The OpenDataMonitor will allow a variety of analytical functions such as:

- comparing public bodies (national/local), indicating changes and updates of catalogues
- showing quality of meta data
- sorting available catalogues for specific thematic domains
- showing licensing information
- making data available in specific open formats
- diverging among available open data of EU member states
- showing the percentage of population (and SIGs) with access to purposeful data
- automatic scoring to indicate the level of openness

UrbanData2Decide

Integrated Data Visualisation and Decision Making Solutions to Forecast and Manage Complex Urban Challenges



The UrbanData2Decide project aims to extract and process information from two rich sources, namely public social media and open data catalogues. This information, combined with advice from expert panels, will support local governments towards a holistic, sustainable and well-founded decision-making process which takes into account the views and perspectives of all relevant stakeholders. **Building on the broad data pools in the form of social media content and open data sets, the UrbanDataVisualiser will aggregate, structure and visualise this data using a multi-layered and multi-dimensional approach. The framework will extensively use data mining, sentiment analysis and visualisation techniques** and lead to the development of a proof-of-concept demonstrator to showcase the information using intuitive and clear dashboards. The UrbanDecisionMaker on the other hand will complement this bottom-up approach by integrating external experts and advisors using scientific multi-round expert integration methods and tools such as the Delphi method, a structured communication technique, developed as a systematic, interactive forecasting method which relies on a panel of experts.

FutureTDM

Reducing Barriers and Increasing Uptake of Text and Data Mining for Research Environments



The widespread growth of data in this current digital age has led to the development of powerful techniques for the effective harnessing of information from digital communications technologies. In this context, **Text and Data Mining (TDM) is an inventive approach for analysing and extracting new insights and knowledge from the exponentially growing world of machine-read material, known as Big Data.** TDM techniques and tools enable researchers from different disciplines to exploit datasets of increasing complexity and diversity from various forms of media. However, the present use of TDM tools across Europe is significantly lower than some countries in the Americas and Asia, likely due to limitations imposed by the European legal framework. As such, the **FutureTDM project identifies and reduces the barriers that inhibit the uptake of TDM for not only researchers, but also innovative businesses.** FutureTDM provides critical up-to-date assessments of legal regulations and policies on TDM within the EU, while maintaining an international scope of the competitive world of Big Data exploitation. Such assessments will lead to the development of novel policy frameworks and interdisciplinary case-driven practitioner guidelines to facilitate the spread of TDM activities. **Furthermore, the acquired knowledge base from both quantitative and qualitative research will be incorporated into a web-based Collaborative Knowledge Base and Open Information Hub using insightful and intuitive visualisations.**

SciChallenge

*Next Generation Science Challenges Using Social Media To Make Science Education
And Careers Attractive for Young People*



Science education is tremendous in shaping the present and future of modern societies. Thus, the EU needs all its talents to increase creativity and competitiveness. Especially young boys and girls have to be engaged to pursue careers in Science, Technology, Engineering and Mathematics (STEM). However, statistics still show that enrolment rates in STEM-based degree programs are low and will lead to a workforce problem in industries, especially in many of the new member countries. **The SCICHALLENGE project focuses on developing novel concepts to actively integrate young boys and girls in science education using a contest-based approach to self-produced digital education materials from young people for young people.** Driven by inspirational topic sheets, guides and toolkits created through this project and distributed by partner schools, teachers, and other youth-oriented institutions, contestants (individuals or groups) between the ages of 10 to 20 will generate creative digital materials (videos, slides, or infographics). **The initiative will broadcast and distribute content over various social media channels and aggregated on a modern SCICHALLENGE Web Platform** to generate wide reaching awareness and promotion. Winning submissions will receive prizes funded by science-oriented industry and stakeholders. Intelligent cross-sectoral positioning of various awareness modules on the SCICHALLENGE Open Information Hub will increase awareness on science careers and open opportunities for youngsters on internships or taster days in STEM through the strong involvement of related organisations and industries. Additionally aggregated information on science events (slams, nights, festivals etc.) is shared. With this multi-level approach, **SCICHALLENGE will boost the attractiveness of science education and careers among young girls and boys leading to more public engagement in science, economic prosperity and global competitiveness on a pan-European level.**

SYNYO GmbH

Enabling the Future.

SYNYO GmbH is a high dynamic enterprise focusing on research, innovation and technology located in Vienna, Austria. SYNYO explores and develops novel methods, technologies and solutions in various domains tackling societal, political, ecological and economical challenges. SYNYO analyses the impact of emerging technologies from different angles and from an interdisciplinary perspective. The team at SYNYO consists of highly skilled employees specialized in various scientific and technical fields like Social Sciences, ICT & Technology, Safety & Security, Energy & Sustainability, Urban Future, Smart Health Digital Systems and Smart Technologies.

The multinational team of SYNYO consists of motivated employees working on national and international projects. This interdisciplinary team is specialized in various social and technical fields, including research studies, requirements analyses, application design, software engineering, data analytics, and information visualisation. This technical expertise is applied to tackle contemporary challenges in various disciplines such as big/open data research, digital futures, e-health, citizen inclusion, and smart technologies. The research processes and proprietary methodologies are designed to convert complex information into clear and precise data for developing constructive actions.

Up to now SYNYO has been involved in 21 research projects and has created strong management capabilities as coordinator of 7 European (FP7, H2020, AAL) projects. Within all projects the interdisciplinary team of SYNYO has taken a role in the whole project lifecycle including basic investigations, requirements analyses, concept designs, technical implementations, programming, validations as well as research dissemination, communication and exploitation tasks. SYNYO is well connected within the scientific community and cooperates with several practitioner networks. Over the last years SYNYO has been among the most successful research-oriented SMEs in Austria based on the performance monitor of the national research agency.

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