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Scan4Reco

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Deliverable

D8.2 Communication Plan

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Executive Summary

The communication plan is the deliverable D8.2 as a result of task 8.1 of work package 8 on Socio-Economic Framework, Dissemination and Exploitation. It defines procedures, strategies and materials to communicate on the Scan4Reco project towards to internal and external stakeholders. These stakeholders are project participants with their scientific and commercial interests, the European Commission and national funding authorities, the community of potential end-users of the planned Scan4Reco device and its potential standards, the companies who offer products or services for analysing cultural heritage objects and, last but not least, the general public.

This document shall be adapted during the project runtime as needed even after one of its versions will be released as deliverable.

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1. Introduction

The Scan4Reco project aims to develop a platform for scanning and reconstruction cultural heritage objects in four dimensions, which are three in space and one in time. This spatio-temporal data should allow extrapolation of the changes in shape and material over time, especially considering processes of material degradation. The platform should be modular and multi-modal, which means that the user should be able to add sub-components to the device to measure different physical properties in three dimensions at different points in time. Data collected should allow spatial reconstructions of the object at different stages of degradation in time – both on a computer and by advanced three-dimensional printing.

Consequently, output of the project is hoped to turn out beneficial for different communities such as professionals in sciences dealing with archaeology, art history and cultural heritage conservation, companies developing and manufacturing equipment for cultural heritage analysis, conservation and reconstruction and thus last but not least the society in general.

For impact on a European level, different communities have to provide input and feedback to the project consortium to help identifying a solutions or standards close to their needs. Even more important, part of them will have to be won over to commit to procedures and standards proposed by the consortium even after the lifetime of the project. The broader the base of exchange, the more sustainable the solutions found will be.

This communication plan summarizes considerations and planned actions to present the project and its goals to the various communities. It is organized in three parts. First, each stakeholder group is described including the desired, required and planned interaction between the consortium and that group. This basically is the core information of the communication plan. A second part summarizes that information within two tables to provide a concise overview on the communication goals and actions planned. The third part deals with practical aspects of implementation, such as text building blocks to be used within a wide range of project marketing material, definitions for project identity, formats and details on certain means of communication.

2. Communication by Stakeholder Group

This section is dedicated to communication with the different stakeholder groups of the Scan4Reco project. Each subsection will describe one stakeholder group (Table 1) and its interests, name the goals of communication by the project consortium, list the actions and means of communication proposed to meet these goals and the timeline including participants responsible for planned communication actions.

The project started with October 2015 for a duration of 36 months. Time will be noted in months relative to the project start date. The *n*th month will be M*n*, with $n \in \{1, 36\}$.

Deviations from the plan will be made in case this will be needed to protect exploitation of existing or future project results.

Consortium	Funding Agencies	Scientific Cultural Heritage Community	Cultural Heritage Analysis Industry	General Public
consortium	European Commission	scientists	manufacturers of analysis devices	individuals
participants with primarily scientific background	Swiss Federal Department of Economic Affairs	universities and institutes	service providers	press and media
participants interested in commercial exploitation		museums		European public
		galleries and collectors		

Table 1: Stakeholder groups related to the Scan4Reco project.

2.1 Project Consortium

The project consortium consists of the individual participants (Table 2) which will be referred to by an abbreviating tag throughout this document.

From a stakeholder point of view, the consortium holds three groups (Table 3), namely the consortium as a whole, the group of participants with primarily scientific background and the group participants interested in commercial exploitation. Affiliation with the latter groups is not strict and may change as the project evolves or even thereafter.

While these three groups are indeed stakeholders, from the logical scope of this plan they act as sender of communication rather than receiver. Therefore, in this subsection only their interests and means of internal communication will be listed.

2.1.1 Stakeholder Interests

The interest of the consortium as a whole is to achieve the project goals in a timely manner, by employing good scientific and engineering practice and with sustainable results.

The participants interested in scientific dissemination aim to promote the Scan4Reco concept within the cultural heritage community, and by doing so, to broaden their standing within that community and to enhance their basis to acquire future funding.

The participants interested in commercial exploitation seek to promote standardization for instrumentation for the cultural heritage community. They further will investigate ways of creating products or services for their own entity or as part of collaborations.

2.1.2 Communication Means

The consortium will communicate internally primarily by email, phone conferences and meetings. Templates for presentations [1] and internal reports [2] exist. Participants are

encouraged to make use of these templates, however, for internal communication they are free to follow communication standards of their organization as well.

Tag	Participant	Address
CERTH	Ethniko Kentro Erevnas kai Technologikis Anaptyxis	Charilaou Thermi Road 6 km, Thermi, Thessaloniki 57001, Greece
OF-ADC	Idryma Ormylia	Ormylia 63071, Greece
FRH-IGD	Fraunhofer Gesellschaft zur Förderung der angewandten Forschung e.V.	Hansastraße 27c, 80686 München, Germany
UNIVR	Universita degli Studi di Verona	Via dell'Artigliere 8, Verona 37129, Italy
OPD	Opificio delle Pietre Dure	Via degli Alfani 78, Firenze 50121, Italy
CRS4	Centro die Ricerca, Sviluppo e Studi Superiori in Sardegna Srl	Via Palabanda 9, Cagliari 09100, Italy
BWTEK	B & W TEK Europe GmbH	Seelandstraße 16, 23569 Lübeck, Germany
AVASHA	Avasha AG	Dorf 97, 9428 Walzenhausen, Switzerland
RFSAT	Research for Science, Art and Technology Ltd	Shoreham Street 311, Sheffield S2 4FA, United Kingdom

Table 2: Abbreviation tags for participants in the Scan4Reco project.

Stakeholder Group within Consortium	Participants
consortium as a whole	CERTH, OF-ADC, FRH-IGD, UNIVR, OPD, CRS4, BWTEK, AVASHA, RFSAT
participants with primarily scientific background	CERTH, OF-ADC, FRH-IGD, UNIVR, OPD, CRS4
participants interested in commercial exploitation	OF-ADC, FRH-IGD, BWTEK, AVASHA, RFSAT

Table 3: Stakeholder groups within the Scan4Reco project consortium.

2.2 Funding Agencies

The Scan4Reco project receives public funding by the European Commission under grant agreement 665091 and by the State Secretariat for Education, Research and Innovation within the Swiss Federal Department of Economic Affairs under contract 15.0261.

2.2.1 Stakeholder Interests

These two funding agencies are supervising the completion of obligations by the project participants according to the respective funding contracts. Apart from this formal aspect, they support the project outcome to be in line with the dissemination targets of the H2020-Reflective-7-2014 call of the Horizon 2020 funding program.

2.2.2 Consortium Communication Goals

The consortium aims to support the funding agencies by coherent reporting and to profit from the funding program information structure to broaden dissemination of project results.

2.2.3 Communication Actions, Means and Responsibles

The project consortium will communicate with the European Commission via the project coordinator CERTH. Communication with the State Secretariat for Education, Research and Innovation will be made by AVASHA directly using templates provided by the agency.

For deliverables, a document template [3] and internal review process exist. Reports on deliverables will be evaluated by two reviewers from participants different from the lead author. A quality manager from the project coordinator will approve the final report version based on the review reports before electronic submission to the European Commission.

CERTH has submitted key data on the project to the European Commission to allow publication of a project fact sheet.

2.2.4 Communication Timeline

Communication with the funding agencies for the purpose of contractual supervision will be throughout the project lifetime. The project fact sheet was available with M1.

2.3 Scientific Cultural Heritage Community

The scientific cultural heritage community consists of individual professionals and entities which study on, work with or are otherwise interested in cultural heritage objects. The most common scientific disciplines involved should be archaeology, art history, art conservation and conservation science. Related entities will include universities, scientific institutes, conservation institutes, museums and, indirectly, galleries and collectors.

2.3.1 Stakeholder Interests

Reactions of the heterogeneous scientific cultural heritage community towards the Scan4Reco project might range from approval to scepticism and criticism. However, if the consortium manages to reflect community needs well, the scientific community should be interested in reports on spatio-temporal reconstructions, in reference measurements on the ageing of materials, in the potential documentation advantages and increased ease of use of the novel instrumentation and in ways of incorporating the latter into their own working practice.

2.3.2 Consortium Communication Goals

Consequently, communication by the consortium has to be highly interactive to collect and evaluate end-user requirements and re-adjust development targets whenever (still) possible. For fruitful community feedback, it is also essential to ensure that professionals understand practical and financial benefits of the platform character of the Scan4Reco system and alleged benefits of standardization. This way, some professionals and entities might become proponents for the dissemination of concepts within the community. Finally, project partici-

pants with primarily scientific background seek to distribute scientific output resulting from the project to the community.

2.3.3 Communication Actions and Means

For collection of community feedback, the consortium will communicate with individual professionals and entities by personal communication, via questionnaires and mutual meetings or visits to events. The community in general will be addressed by conference talks, may be by booths on workshops and conferences as well as advertisements and articles in non-scientific journals.

For scientific publication, participants will choose journals with appropriate level of quality and reach. The participants are encouraged but not obliged to make use of open access journals.

Above actions will be directly or indirectly supported by distribution of brochures, posters and promotional gifts, by reference to the project website and the project fact sheet, by the project website itself, the project wiki and a newsletter, news feed and social networking channels.

Deliverables for public dissemination may be published on the project website and the project's ZENODO archive.

2.3.4 Communication Timeline and Responsibles

Dialogue with professionals and entities of the cultural heritage community started in M3 to collect feedback on user requirements. It will intensify during the system architecture definition phase between M4 and M6.

Dissemination of scientific results via journals and conferences will start as soon as results will be available.

Communication is led by the participants with primarily scientific background as defined above (Section 2.1, Table 3). However, all other participants will contribute in case of contact or publication opportunities, especially within their respective counties.

2.4 Cultural Heritage Analysis Industry

For the platform nature of the Scan4Reco system to be sustainable, manufacturers of instrumentation for cultural heritage analysis will have to offer products compatible with the standards which are supposed to emerge for the platform. As a stakeholder group, the cultural heritage analysis industry is formed by all entities who design, manufacture and distribute measurement equipment which might be used for spatial or spatio-temporal analysis of cultural heritage items.

2.4.1 Stakeholder Interests

For companies of the cultural heritage analysis industry who are open towards the idea of the Scan4Reco platform, the primary long term interest will be to maximize sales of compatible instrumentation while minimizing development efforts, manufacturing cost and product portfolio fragmentation. Therefore, as a starting point, they will appreciate standards

close to solutions they already offer. Readiness to adapt to standards far from properties of their established products will increase with the visibility of positive feedback from the scientific cultural heritage community.

2.4.2 Consortium Communication Goals

In a first stage, the consortium will try to create awareness about the platform idea within the cultural heritage analysis industry. At the same time, feedback will have to be collected to allow working out proposals for standardization which meet expectations and needs of the industry while considering usability and acceptance by the scientific community.

Those entities which will already have shown interest or commitment for the Scan4Reco goals will have to be informed about and involved into future decisions on system design or standardization efforts.

Awareness of the platform nature of the Scan4Reco system has to be created also within the scientific community, since this might indirectly increase awareness within the industry.

2.4.3 Communication Actions and Means

Consequently, communication will have to be highly interactive and iterative. It will mainly require personal exchange with decision makers within the industry.

For creating general awareness, conference talks, booths on workshops and conferences and articles in non-scientific journals will be considered.

Above actions will be directly or indirectly supported by distribution of brochures, posters and promotional gifts or by reference to the project website and the project fact sheet, by the project website itself, the project wiki and a newsletter, news feed and social networking channels. A dedicated brochure on the evolving platform characteristics may be created and distributed.

2.4.4 Communication Timeline and Responsibles

After the system architecture will have been matured and defined, exchange between the consortium and key partners from the cultural heritage analysis industry will start in M15.

Communication is lead by the participants interested in commercial exploitation as defined above (Section 2.1, Table 3). All other participants will contribute to creating awareness on the platform character and will forward contacts to the relevant participants.

2.5 General Public

The general public as a stakeholder group is formed by all persons and organizations worldwide who are interested in the cultural heritage and its conservation, art history and archaeology. An important subgroup is the European public.

2.5.1 Stakeholder Interests

The general public will be interested in learning about the socio-economic and scientific potential of achieved and estimated results from the Scan4Reco project. These may be related to art, history, archaeology, technology and public finances. The European public may

exhibit increased interest in results concerning European cultural heritage objects as well as effectiveness of public funding for the project.

2.5.2 Consortium Communication Goals

Communication of project results to the public shall satisfy the information need and curiosity of individuals interested in arts and science. Potential future benefits related to public spending or the quality of art conservation will be highlighted to justify the taxes used for project funding.

The general public will receive information on the project progress and success in a passive way. Active dissemination by individual participants is optional.

2.5.3 Communication Actions and Means

The project web page will contain information on the project easy to understand for non-academic and non-professional individuals interested in cultural heritage.

A virtual museum will visualize two-, three- and four-dimensional data of sample artworks measured with the Scan4Reco system. The virtual museum will be accessible via the project website.

On the website, press and other members of the public will be encouraged to get in touch with the participants. Participants will inform each other about all inquiries by the general public.

2.5.4 Communication Timeline and Responsibles

First information dedicated to the general public has be made available by M2 within the scope of the website. Material dedicated to the public will be subsequently revised and updated. The virtual museum shall be available by M34 or earlier.

The website is maintained by CERTH.

3. Summary

For better overview, the core information of the communication plan in the previous section has been summarized into two tables and one figure.

The first table (Table 4) lists the means of communication together with the stakeholder groups addressed and the project participants responsible for communication action. The communication matrix (Table 5) is similar, but omits information on responsible participants in favour of communication goals per stakeholder group. Finally, a temporal overview on the planned communication activities is given (Figure 1).

Means of Communication	Target Stakeholder Groups	Responsible Participants
internal presentations, internal reports	consortium	all participants
text building blocks	all stakeholder groups	all participants
project identity		
project fact sheet		RFSAT
interaction with agency	funding agencies	CERTH, AVASHA
deliverables		all participants
Zenodo archive	funding agencies, scientific cultural heritage community	CERTH
scientific publications	scientific cultural heritage community, cultural heritage analysis industry	participants with primarily scientific background
posters		
personal exchange of ideas with individuals and entities		participants with primarily scientific background, participants interested in commercial exploitation
conference talks		
booths on workshops and conferences		
articles in non-scientific journals		
advertisements in non-scientific journals		
brochures		
newsletter, news feed and social media		
promotional gifts		all participants
website, area for • scientific community • analysis industry • general public	scientific cultural heritage community, cultural heritage analysis industry, general public	CERTH
virtual museum	general public	CERTH
availability for public inquiries		all participants

Table 4: Means of communications and participants responsible to employ them to address various stakeholder groups.

	Con-sortium	Funding Agencies	Scientific Cultural Heritage Community	Cultural Heritage Analysis Industry	General Public
communication goals		Provide coherent reporting. Support agency dis-semination efforts.	Collect end-user requirements to define or re-adjust specifications. Display practical and financial benefits of platform and standardization. Win proponents and drivers of platform.	Create awareness of platform idea. Receive feedback for considerations on standardization. Inform about system design and standardization.	Satisfy information need of individuals. Highlight potential socio-economic benefits.
internal presentations and reports	•				
text building blocks	•	•	•	•	•
project identity	•	•	•	•	•
project fact sheet		•	•		
interaction with agency		•			
deliverables		•			
ZENODO archive		•	•	•	
personal exchange of ideas			•	•	
brochures, leaflets			•	•	
posters			•	•	
scientific publications			•	•	
conference presentations			•	•	
booths on workshops and conferences			•	•	
non-scientific journals			•	•	
newsletter, news feed and social media			•	•	•
promotional gifts			•	•	
website	•	•	•	•	•
virtual museum			•		•
availability for public inquiries					•

Table 5: Communication matrix.

Figure 1: Communication activity timeline.

4. Tools for Implementation

This section holds a heterogeneous mix of material to support the implementation of the communication plan.

First, the foreseen mechanism for dissemination management and evaluation is introduced.

Then, text building blocks to describe the project, its participants and the modalities will be presented. These paragraphs will serve participants as basis for a variety of communication material to be created.

Following subsections deal with project identity and formal aspects of documents.

In the last subsection, explanations and definitions for several means of communication follow. These do not aim to be complete, but rather complementary to the first part of this document.

4.1 Planning and Monitoring Communication Efforts

A project wiki has been set up for internal use by the consortium to assist the coordination of project dissemination. This support includes overview and collaboration on goals, strategy definitions and activities. In addition, the effectiveness of dissemination activities will be measured (Table 6). The results will be presented within the project's final report.

Dissemination Activity	Measure for Success of Activity	One-Year Target
project identity and branding	level of positive identification	approved by participants
dissemination material	brochure or leaflets, project fact sheet, promotional gifts	produced and printed
project website	statistics on number of visitors	10000 hits, 250 unique visitors
social media • YouTube channel • Facebook • Twitter	 • number of hits • number of followers • number of tweets, number of followers	 • 1500 hits • 1000 followers • 1000 followers, 100 tweets
other media coverage • newsletter • press releases • publications	 • number of circulations • rates of coverage, general news interest • number of articles	 • 1 newsletter • 1 press/media coverage • 3 publications
networking events and workshops	number attended, number organized	1 event collocated with other ones and/or hosted
cluster with relevant projects and global-level initiatives	number of clusters	cluster with 1 project and/or initiative

Table 6: Measuring success of dissemination activities.

4.2 Key Messages as Text Building Blocks

Material for project communication may employ text paragraphs as building blocks agreed upon by all participants. These building blocks are not static and may be adapted as the project evolves.

The project summary descriptions (Table 7) can be used to introduce the Scan4Reco project and its objectives to persons or organizations unaware of the project itself. They vary depending on the stakeholder group addressed and contain the key messages to the respective group.

The modality descriptions (Table 8) provide an easy to understand summary of each modality to be used within the Scan4Reco system including the modality's purpose in cultural heritage analysis.

Finally, the project participant short descriptions (Table 9) present each participant in general and its role in the consortium.

Stakeholder Group	Short Description
all	Our cultural heritage and the way we preserve and value it is a major factor in defining Europe's identity and attractiveness as a place to live, work and visit. It is powerful in creating a sense of belonging among European citizens. Therefore, the need to preserve, provide advanced access to and understanding of cultural heritage is obvious, especially when considering its wealth throughout Europe. **Scan4Reco Solution** The Scan4Reco project aims to deliver a user-friendly, modular and standardized platform that will be able to non-destructively scan cultural assets with a range of sensors, each of which delivering specific geometric, physical and chemical data. This will result in a hierarchical, multi-layered and multi-dimensional model of the object of interest. The data will allow detailed material analysis and prediction of decay and ageing processes, making the platform a valuable tool for conservation and restoration. For 3D printing of reconstructed copies of the original object at any stage of ageing, a process will be developed to yield realistic surface appearances based on the scanned data. A virtual museum is planned to share cultural heritage among professionals, students and the public alike. The project is funded by the European Commission under grant agreement 665091 and by the Swiss State Secretariat for Education, Research and Innovation under contract number 15.0261 within the Horizon 2020 Framework Program.
scientific cultural heritage community	Various professionals responsible for cultural heritage objects can take advantage from Scan4Reco outputs, among them curators, restorers and conservation scientists. In particular, 3D digitalization of cultural heritage objects can provide curators with a powerful tool that increases their capability to visualize artwork surfaces as well as their knowledge of the material aspects and of their changes over time. A decision supporting system will provide aid to restorers by indicating the most suitable treatment procedures, selected by the system through the knowledge of the behaviour of a certain material upon exposing it in certain environmental conditions.

	Conservation scientists, as being the ones who run investigation and measurements and interpret data in an inter-operative process with curators and restorers, will be benefit of more automatic procedures in (re)positioning analytical probes on specific areas to be investigated. The integration of visualization tools with material information and predictive system makes the Scan4Reco approach quite unique in the framework of projects on 3D tools for cultural heritage.
cultural heritage analysis industry	The idea of an integrated system for measuring, analysing and reconstructing cultural heritage is attractive[1] for professionals and institutions in charge of such objects. Therefore, any customer-oriented company manufacturing measurement equipment used in archaeology or arts should consider to support the Scan4Reco platform. The mechanical, electrical and informational standards are not defined yet and will emerge as the project matures. This also means that the earlier input from equipment manufacturers is made, the better it can be incorporated into the concept. Apart from the chances, members of the Scan4Reco consortium also understand the concerns companies might have and look forward to exchange on ideas. So for companies, the best time to get in touch[2] with the Scan4Reco consortium is now.
general public	The variety of individual goals of the Scan4Reco project may sound complicated and overwhelming. In simple words, Scan4Reco will be a platform consisting of hardware, software and data standards for measuring and processing 3D information on cultural heritage objects. It should be open to use with appropriate measuring equipment from different manufacturers. For a cultural heritage object, the measured 3D image data from different sensors will be stored in one standardized dataset, allowing its reconstruction on the computer screen or a 3D printer at different points in time – which makes the output 4D. The data can also be made available in a virtual museum to users connected to the internet. Therefore, Scan4Reco will make life easier for professionals working with cultural heritage. It can speed up measurements, documentation and collaboration while reducing overall software training needs. The physical and virtual 3D reconstructions may help to gain more insight into past epochs and better plan restoration efforts. Via the virtual museum technology, cultural heritage objects can be presented to students, pupils and interested individuals anywhere in the world without adding stress to the originals. This will allow an enhanced and also new quality of experience for everybody interested in history and arts. Furthermore, the public can profit from cost savings and higher quality in the cultural heritage sector in general.

Table 7: Project summary descriptions for various stakeholder groups including key messages.

Participant	Short Description
time-of-flight 3D scanner	The depth sensor will allow the 3D modelling of a cultural heritage item capturing its **geometric structure** and **appearance**. The data collected allows to looking at and zooming into 3D replicas from different viewpoints and perspectives. At the same time the models will serve as starting point for users to select specific regions of an item for focusing into the more detailed data of other sensors.
optical micro-profilometry	The optical scanning micro-profilometer acquires small areas of the surface at micro-metric scale. In the cultural heritage field, analysis of **small-scale 3D features**, as **roughness** and **texture**, is an effective tool for material characterization and for documenting the conservation status, monitoring the decay, and controlling the treatments of an artwork's surface.

[1] allows link to scientific cultural heritage community

[2] allows link to potential email account or website area dedicated to inquiries from industry

infrared imaging	For infrared imaging, the object is illuminated with a infrared broadband source. The reflection from the surface is imaged by an objective lens onto the focal plane array of a high speed camera. The resulting infrared reflectographic multispectral images reveal the **internal stratigraphic structure** of the object. The size of the imaging area depends on the lens used, and usually larger areas are composed by stitching adjacent areas.
Fourier transform infrared mapping spectroscopy	In Fourier transform infrared spectroscopy, infrared light reflected from the upper surface layers of an object is recorded while scanning the reference arm of a Michelson interferometer. From the resulting interferogram, the spectrum is calculated by Fourier transform. The spectrum holds information on the **chemical composition** of the upper surface layers. Scanning in two dimensions generates images which can reveal stratigraphic information.
infrared Raman mapping spectroscopy	For infrared Raman spectroscopy, a near-infrared laser beam is directed via an optical fiber cable to the object to excite vibrational modes of atoms and molecules within the upper surface layers. The beam may be focused for higher resolution. Emission light from the excited modes is captured and spectrally analysed to obtain information on the **chemical composition** of the object. Scanning in two dimensions generates images which can reveal stratigraphic information.
X-ray fluorescence spectroscopy	X-ray fluorescence spectroscopy uses a primary X-ray beam to excite the electrons in the atoms of the object under observation. The collected secondary X-ray emission contains the fluorescence spectrum of the elements. This allows the qualitative and quantitative analysis of the **elemental composition** of a cultural heritage object.
acoustic microscopy	Acoustic microscopy sends ultrasonic waves into the object and listens to the echoes to see below the surface and obtain the **3D sub-surface geometry**. The concept is similar to the well-known medical ultrasound, but reach within cultural heritage objects is usually very short. For example, hidden paint layers can be visualised without destroying the object.
ultraviolet or visible mapping spectroscopy	In ultraviolet or visible spectroscopy, the object is illuminated by an ultraviolet or visible light standard, respectively. Light from one point of the surface is collected and spectrally analysed to retrieve **colour properties** of the surface. Scanning in two dimensions generates a colour map.
multi-spectral reflectance transformation imaging	Device for measuring, through controlled lighting, the surface structure and visual characteristics of material samples and of flat areas of cultural heritage objects such as paintings or engravings. The application is in material characterization and **object surface** analysis.
visual camera	Except for the time-of-flight 3D scanner, the target areas of the different sensors on the cultural heritage object are very small. An (optional) camera can **visualize and locate the target area** of the other sensor modalities.

Table 8: Short descriptions of modalities to be initially integrable into the Scan4Reco system. Each description includes the modality's benefit for cultural heritage analysis.

Participant	Short Description
CERTH	CERTH is a research organization actively working on the fields of computer vision and virtual reality. Within Scan4Reco, CERTH is responsible for overall project management, while from a technical viewpoint CERTH will offer sensing technology to generate digital 3D replicas of cultural heritage items. In addition, CERTH will develop a software framework that will process measurements from multiple sensors in order to facilitate the conservation and restoration efforts of scholars.

OF-ADC	The Art Diagnosis Centre of Ormylia Foundation conducts interdisciplinary research on and provides services for the analysis, documentation and preservation of artwork and monuments of cultural heritage, with particular expertise on Byzantine iconography. It has already developed a multi-sensor system for cultural heritage analysis and will enrich the Scan4Reco project with engineering and application experience, existing sensor hardware and contacts to industrial partners.
FRH-IGD	The 3D Printing Department of Fraunhofer Institute for Computer Graphics Research develops models, algorithms and software to enable multi-material 3D printing which does not only accurately reproduce shape, but also visual perception based on optical material properties such as colour, texture, gloss and opacity. Within the Scan4Reco project, the department will create a device-independent parameter space to communicate visual properties, develop a workflow to reproduce anisotropic visual information and apply both for printing 3D reconstructions of pilot artworks.
UNIVR	The Department of Computer Science University of Verona covers teaching and research activities in the fields of computer science, mathematics and physics. In Scan4Reco, its Applied Physics group will implement a device for multi-scale surface micro-profilometry and contribute to the physico-chemical characterization of cultural heritage materials. The Visual Computing group will collaborate on the development of reflectance transformation imaging setups and the analysis of multi-modal data for material characterization.
OPD	Opificio delle Pietre Dure is a conservation institute which performs pilot restoration interventions, draws guidelines on conservation projects, tests new materials and procedures and trains conservators. The institute will contribute to Scan4Reco by defining experts' needs on material characterization, digital representation of art objects, analysis of paintings and metals and prediction of material behaviour. It will manufacture realistic material samples to extract ageing data for the predictive system, and identify pilot artworks to evaluate the Scan4Reco system.
CRS4	CRS4 Visual Computing activities focus on the study, development, and application of scalable technology for acquiring, creating, distributing, exploring, and analysing complex objects and environments. In the context of Scan4Reco, it will develop solutions for multispectral reflectance transformation imaging acquisition and processing.
BWTEK	B&W Tek Inc produces optical spectroscopy and laser instrumentation for laboratory, portable and handheld use targeting pharmaceutical, biomedical, physical, chemical, LED lighting and research communities. Its UV, VIS, NIR and Raman spectrometer modules allow small form factor accessories and customizable software control. In Scan4Reco, it will adapt the size and geometry of its Raman spectrometer to the needs of the system architecture in general and the probe positioning subsystem in particular.
AVASHA	Avasha AG designs and manufactures optical imaging and illumination systems according to customer specification. With expertise on the development of products and systems comprising optical, mechanical and electronic components, in the Scan4Reco project, Avasha AG will develop a solution for positioning the various sensors conveniently relative to cultural heritage objects and work and advise on overall system design and integration.
RFSAT	RFSAT Ltd is a research-active SME focusing on research and development through national and international funding, industrial consultancy and commercial exploitation of research results. In the context of Scan4Reco, RFSAT Ltd will develop and implement advanced 3D scanning using stereoscopic vision and time-of-flight approaches as well as modelling algorithms showing object degradation in 3D, especially taking into account a multi-sensor nature of the cultural heritage data.

Table 9: Short descriptions of participants and their roles in the project.

4.3 Colouring, Logo and Font

For project marketing, a uniform colour scheme (Table 10) and logo (Table 11) will be used. The font for printed material shall be Calibri.

	C	M	Y	K	Code	Sample
Blue / Sky	50	30	0	4	7aabf4ff	
Brown / Earth	0	40	78	29	b56d28ff	
Gradient						
Table Header	0	0	0	13	dddddddff	

Table 10: Colour scheme of Scan4Reco project identity.

Table 11: Scan4Reco project logo as monochrome and colour variant.

4.4 Dissemination Levels, Document Conventions

Each document version has one of the following dissemination levels associated:

- consortium (CO)
- consortium and funding agencies (FA)
- confidential and potentially subject to non-disclosure agreement (CONFIDENTIAL)
- public (PU)

The intended dissemination level for a future final version may be indicated within an additional line for the planned release at the bottom of the version table, as in this document. For spam protection, documents with public dissemination level will not contain email addresses or links to email addresses. Instead, the symbol @ will be replaced by *<at>* surrounded by single blanks.

The filename of reports shall have the following format: It shall

- start with *[Scan4Reco]* followed by a blank,
- followed by *WP*, *T* or *D* and the number of the corresponding work package, task or deliverable, respectively, followed by a hyphen,
- followed by the document title formatted in title case with blanks,

- followed by a *.R* and the (integer) number of the report the participant has compiled in the specific work package,
- followed by *.V* and the (integer) number of the version of the report,
- followed by a blank and the participant's tag (Table 2) in brackets and
- closing with the file extension.

As an example, *[Scan4Reco] D1.1-Example for Title.R2.V1 (CERTH).doc* would be the filename of the first version of the second report by CERTH within work package 1.1.

Reports shall be made available in PDF format.

Publications have to quote the following pieces of information:

- This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n°665091.
- This work was supported by the Swiss State Secretariat for Education, Research and Innovation (SERI) under contract number 15.0261. The opinions expressed and arguments employed herein do not necessarily reflect the official views of Swiss Government.
- Copyright of this document is with the Scan4Reco consortium. It may be freely shared and distributed as a whole, but parts of it only with reference to the authors and the consortium.

4.5 Details on Selected Materials for Distribution

4.5.1 Website

The project website is located at http://www.scan4reco.eu and is to provide a concise and comprehensive overview on the project goals taking into account the interests of the different audiences represented by the stakeholder groups.

New contents to the website is submitted to and edited by CERTH.

The website has already been set up in M1 [4]. It contents is organized into the areas Home, Project, Consortium, Results, News & Events and Contact.

Subsequent to the release of this communication plan, the site will be adapted to reflect the external stakeholder groups in the Home and Project areas and to eliminate existing redundancies. In addition, the participant short descriptions (Table 9) will be added to the Consortium area. These changes will be revised for compatibility with exploitation goals of each participant.

The project description in the Home section will be synchronized with the project summary description common for all stakeholder groups (Table 7, first row).

Sub-pages to the Project section (Figure 2) will be added for the scientific cultural heritage community (*For Professionals*), for the cultural heritage analysis industry (*For Companies*) and the general public (*For Citizens*). Another new sub-page will introduce the different devices for analysing cultural heritage (*Modalities*). Future improvements will be added as results become available. For example, once the system architecture will have been completed, another sub-page (*Scan4Reco System*) will be integrated. Existing redundancies in content shall be eliminated.

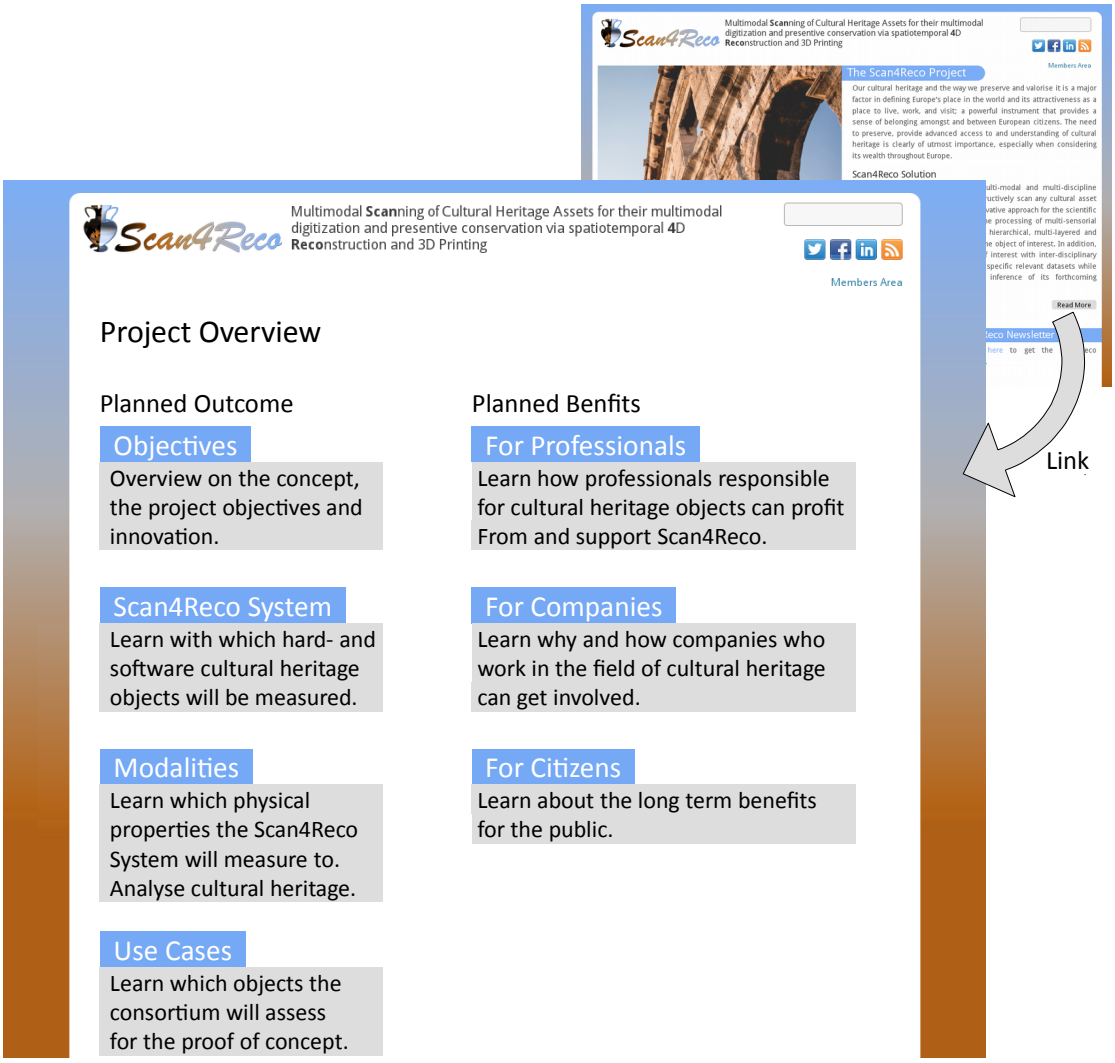

Figure 2: Proposal for stakeholder-oriented sectioning of the project area on the website.

4.5.2 Project Fact Sheet

Project fact sheets are published by the European Commission on their funded projects. Mainly, they contain an abstract, the funding program, the project runtime and a list of the beneficiaries and the amount of funding. The Scan4Reco project fact sheet is available at http://cordis.europa.eu/project/rcn/197123_en.html.

4.5.3 Electronic Distribution of News

Notifications to audience already interested in the project will be available as newsletter, news feed and via the social networks Facebook, Twitter and LinkedIn.

Requests for electronic distribution of news will be sent to CERTH. Contents exceeding the nature of announcements of events will be sent to the consortium participants and is regarded as approved for publication unless participants contradict.

4.5.4 Brochures, Leaflets and Posters

The formats of a brochure (A4 or A5) and a folded leaflet (A4 with two folds and six pages) both can serve to inform about the project with a concise and economical printed matter. Due to the complexity, high number of stakeholder groups and participants, a brochure might be more user friendly while allowing to better address also emotional levels.

An initial leaflet [5] has been updated [6] to incorporate the aforementioned text building blocks and meanwhile updated graphical design elements.

One or more posters may be created and distributed to organisations of the scientific cultural heritage community to be displayed within their premises or in the scope of their events. This should create awareness within the community or might even serve to attract external scientific contributors.

4.5.5 Promotional Gift

A promotional gift will be distributed by all partners in appropriate situations to individuals from target stakeholder groups to create and maintain a positive and professional association with the project. The gift shall be a USB stick with the project logo printed on one side and the address of the Scan4Reco website on the other. Printing will be monochrome. Participants distributing the gift will note the date, circumstance and receiver (if known) to keep track.

4.5.6 Scientific Publications

All participants shall be informed about any plan for publication as soon as possible and receive drafts for revision no shorter than one month before submission.

For publication not subject to open access, the following journals will be considered non-exclusively: Acta Archaeologica, AJA, Archaeology, Archaeometry, CAA, Cambridge Archaeological Journal, CHNT, CVIU, DAACH, EAA, IEEE PAMI, IEEE TIP, International Symposium on Archaeometry, JCH, JOCCH, JCHMSD.

4.5.7 Publications and Advertisements in Non-Scientific Journals

In each scientific or engineering discipline several non-scientific journals and magazines exist which are mainly financed by direct or indirect advertisement from companies within the respective industry. Examples are *Photonics Spectra* and *Europhotonics* (Laurin Publishing Company, Inc., respectively) or *LaserFocusWorld* (PennWell Corporation) in the field of sensing modalities.

Distribution of such magazines is usually free of charge for the recipient, so that they are widely read among professionals. Therefore, they are ideal to place overview articles on the Scan4Reco project to create awareness and attract external contributors and followers from science and industry alike.

A contribution will be presented in the OPD annual bulletin *OPD restauro* (Centro Di), which, despite in Italian, has an international target among conservators and curators. The same group of professionals will be address through specific journals such as *Kermes* (Nardini Press Srl).

Advertisements in non-scientific journals or magazines may serve as second choice for attracting external contributors in case the planned actions will prove as insufficient.

4.5.8 ZENODO Archive

ZENODO is an open access compliant portal developed by CERN under the European Union Framework Program 7 project OpenAIREplus. It supports projects and their participants in complying with open access policies in the Horizon 2020 program, thus avoiding the need of setting up individual repositories compliant to open access.

Project content with public dissemination level may be made available on the repository https://zenodo.org/collection/user-horizon2020-reflective7-scan4reco hosted at ZENODO. This may include public deliverables, conference and journal articles subject to open access or data generated in the project that is not subject to restrictions according to European Commission privacy directives or individual participants' interests for exploitation.

References

[1] Scan4Reco template for internal presentations.
[2] Scan4Reco template for internal reports.
[3] Scan4Reco template for deliverables.
[4] Scan4Reco report on deliverable D8.1 “Website”.
[5] Scan4Reco Leaflet, Version 1.
[6] Scan4Reco Leaflet, Version 2.