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PrINCIPAL INVESTIGATOR	Prof Gabriele Gattiglia, UNIPI
Tel:	+39 050 2215228
E-mail:	gabriele.gattiglia@unipi.it

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D 1.2 IPR and Knowledge Management Plan

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Disclaimer

Abbreviations

WP: Work package

M: Month

UNIPI: Universita di Pisa

UBM: Universite Bordeaux Montaigne

UoY: University of York

INRAP Institut National de Recherches Archeologiques

AMZ: Arheoloski Muzej u Zagrebu

QB: QBrobotics Srl

HUJ: The Hebrew University of Jerusalem

MIN: Miningful srls

KCL: King's College London

IIT: Fondazione Istituto Italiano di Tecnologia

UB: Universitat de Barcelona

CL: Culture Lab

Executive summary

This deliverable defines the Intellectual Property Rights (IPR) and Knowledge Management (KM) Plan for the AUTOMATA project, outlining how the consortium will manage the ownership, protection, access rights, and exploitation of background and foreground knowledge, as well as materials subject to copyright or database protection.

The overarching objective is to ensure that knowledge generated within AUTOMATA is managed effectively, made accessible according to Open Science principles where appropriate, and protected in a manner that maximises impact, usability, and innovation potential. All software produced within AUTOMATA will be released under open-source licences, and all datasets will be made available as open data following FAIR principles. The strategy aims to strike a balance between openness and the protection of critical assets, ensuring that partners can leverage results while complying with Horizon Europe obligations.

The Knowledge Management section focuses on structuring access to pre-existing knowledge (Background) and on defining ownership and access rights regarding project-generated results (Foreground). It also outlines the mechanisms that ensure fair allocation of rights among partners.

The IPR Management section deals with the protection and valorisation of AUTOMATA's outputs, considering copyright, database protection, and, where applicable, the patentability of innovations. Special attention is paid to licensing models, open data policies, and ensuring the interoperability and reusability of generated datasets and software.

1 Introduction

In collaborative research projects, IPR and knowledge management are essential for ensuring that the generated outcomes are protected, accurately attributed, and made available for further use, innovation, and societal benefit.

Without a clear and shared strategy, there is a risk of misappropriation of results, barriers to exploitation, and failure to realise the full impact potential of the research. AUTOMATA addresses this by defining a structured, transparent, and flexible IPR and Knowledge Management Plan that supports the project's commitment to Open Science while respecting partners' rights and legitimate interests.

The plan integrates legal, technical, and ethical dimensions and adheres to the principles laid out in the Grant Agreement, the Consortium Agreement, and relevant EU regulations.

2 Knowledge Management Strategy

Knowledge Management (KM) within AUTOMATA is a fundamental pillar to ensure that knowledge and innovations generated throughout the project are effectively captured, protected, shared, and exploited. KM refers to the structured process of creating, managing, sharing, and preserving knowledge produced before, during, and alongside the project activities.

To guarantee clarity and coherence across the consortium, knowledge is classified into three main categories:

- **Background**: Pre-existing knowledge, information, data, know-how or intellectual property owned or held by the partners prior to their accession to the Grant Agreement, and needed for the project's implementation or exploitation of its results. The Background has been formally identified and agreed upon in Attachment 1 of the Consortium Agreement.
- **Foreground (Results)**: All new knowledge, results, and intellectual property generated during the course of the project. Foreground may encompass tangible outputs (software, databases, hardware prototypes) and intangible outputs (data models, algorithms, methodologies).
- **Sideground**: Knowledge developed independently by partners during the project's timeline but not directly under the scope of the Grant Agreement. While not part of the contractual outputs, Sideground may contribute to future research, innovation, or exploitation activities.

2.1 Ownership

Ownership of the Foreground lies with the Party generating it. In cases where several Parties have jointly generated results and their respective contributions cannot be clearly separated, the Foreground will be subject to joint ownership. In such circumstances, the Parties concerned will enter into a Joint Ownership Agreement to define their respective rights, obligations, and exploitation strategies.

Each Party retains full ownership of its Background and Sideground, unless specific bilateral agreements are negotiated.

2.2 Access Rights

Access Rights are essential to ensure seamless collaboration and effective exploitation of the project results. AUTOMATA defines Access Rights according to the following principles:

- **For project implementation**: Each Party is granted royalty-free Access Rights to the Background and Foreground of other Parties where necessary for the execution of their tasks within the project.
- **For exploitation purposes**: Access to Background and Foreground will be granted under fair and reasonable conditions, ensuring that Parties are able to further develop, commercialise or use the results after the project's conclusion.

Access Rights shall be requested in writing and can be subject to additional conditions aimed at safeguarding confidentiality, legitimate interests, and commercial potential.

2.3 Data Governance and FAIR Principles

Data management within AUTOMATA will strictly follow the FAIR principles, ensuring that data is:

- **Findable**: Properly indexed and described with rich metadata.
- **Accessible**: Available through trusted repositories with clear access procedures.
- **Interoperable**: Structured to facilitate integration with other datasets and systems.
- **Reusable**: Provided with clear licences allowing legal and technical reuse.

All datasets produced will be deposited in certified repositories (such as the Archaeology Data Service), accompanied by comprehensive metadata to support their long-term preservation and reuse. In line with the strategic guidance of the ECHOES infrastructure, data governance within AUTOMATA adheres to the interoperability and accessibility guidelines set out by the European Collaborative Cloud for Cultural Heritage (ECCCH). As referenced in D11.1, these principles are embedded across all dissemination and archiving workflows (see also WP10 and WP11.4).

2.4 Knowledge Sharing

Knowledge sharing is a core requirement in AUTOMATA. All Parties are committed to proactively disseminating information necessary for the successful implementation of the project. Internal sharing mechanisms include regular meetings, deliverables, reporting to the Management and Technical Board, and contribution to shared platforms.

Special attention will be paid to ensuring that knowledge is shared promptly, transparently, and in ways that respect confidentiality obligations and intellectual property considerations.

2.5 Open Access and Open Science

AUTOMATA embraces Open Science principles, with a strong commitment to:

- Ensure Open Access to all peer-reviewed scientific publications resulting from the project.

- Make all datasets, 3D models, and software outputs available as **open data** and **open source**, ensuring maximum accessibility, reuse, and societal impact.

All software produced will be released under recognised open-source licences (e.g., GPL, MIT, or equivalent), enabling free use, modification, and redistribution. Datasets will be published under Creative Commons licences (preferably CC-BY) to promote wide dissemination and reuse.

In line with Horizon Europe requirements, open dissemination will be balanced with necessary protection measures to safeguard any commercially valuable results prior to public disclosure.

3 IPR Management Strategy

The Intellectual Property Rights (IPR) Management Strategy within AUTOMATA is designed to ensure that all project outputs are appropriately protected, managed, and exploited, aligning with the principles of Open Science and the requirements of Horizon Europe. This strategy facilitates the dissemination of knowledge while safeguarding the interests of all consortium partners.

3.1 Identification and Protection of Results

All results generated within AUTOMATA, including software, datasets, methodologies, and publications, will be systematically identified and documented. Each result will be assessed to determine the most suitable form of protection, considering factors such as the nature of the result, potential for exploitation, and alignment with Open Science principles.

- **Software**: Developed software will be protected under appropriate open-source licenses (e.g., MIT, GPL) to encourage reuse and collaboration.
- **Datasets**: Datasets will be shared under open data licenses (e.g., CC BY, CC0), ensuring compliance with FAIR principles and facilitating broad accessibility in compliance with ECCCH standards.
- **Publications**: Scientific publications will be made available through open access channels, adhering to Plan S requirements and maximising visibility.
- **Other Outputs**: Innovations such as algorithms or methodologies will be evaluated for protection through means such as copyright or, where appropriate, patent applications, ensuring that such protection does not hinder openness and collaboration.

As detailed in Deliverable D11.1, all Key Exploitable Results (KERs) of AUTOMATA — including the robotic working cell, digitisation software, AI algorithms, and artistic performance guidelines — will be released under open-source or open-access licences. This strategy, grounded in Open Copyleft principles, enables broad replicability, ensures accessibility for third parties, and fosters long-term impact beyond the project's lifecycle.

3.2 Ownership and Joint Ownership

Ownership of results will be determined based on the contributions of each partner:

- **Sole Ownership**: Results developed by a single partner will be owned by that partner.
- **Joint Ownership**: For results developed collaboratively, joint ownership agreements will be established, detailing the rights and responsibilities of each party, including terms for exploitation

and revenue sharing.

These agreements will be formulated in accordance with the Consortium Agreement and the Grant Agreement, ensuring clarity and preventing disputes.

3.3 Access Rights

To facilitate collaboration and exploitation, access rights to Background and Foreground will be granted as follows:

- **For Implementation**: Partners will have royalty-free access to the necessary Background and Foreground for project implementation.
- **For Exploitation**: Access for exploitation purposes will be granted under fair and reasonable conditions, negotiated on a case-by-case basis, ensuring that such access does not compromise the interests of the owning partner.

Requests for access rights will be documented and processed in a timely manner, with considerations for confidentiality and competitive interests.

3.4 Licensing Strategies

AUTOMATA's licensing approach aims to balance openness with the protection of intellectual assets:

- **Open Source Licensing**: Software will be released under licenses that promote reuse and collaboration, such as MIT or GPL, depending on the nature of the software and the desired level of openness.
- **Open Data Licensing**: Datasets will be shared under licenses like CC BY or CC0, facilitating broad reuse while ensuring appropriate attribution.
- **Custom Licensing**: In cases where standard licenses are not suitable, custom licensing agreements will be developed to address specific needs, always aligning with the project's commitment to Open Science.

All licensing decisions will be documented, and guidance will be provided to partners to ensure compliance and understanding.

3.5 Exploitation and Dissemination

The exploitation strategy will focus on maximising the impact of project results:

- **Commercial Exploitation**: Partners will identify opportunities for commercialisation, supported by market analyses and business planning.
- **Academic Dissemination**: Results will be disseminated through publications, conferences, and workshops, promoting knowledge sharing and academic collaboration.

- **Policy Engagement**: Findings relevant to policy will be communicated to stakeholders and policymakers, contributing to informed decision-making.

Dissemination activities will respect confidentiality obligations and will be coordinated to ensure consistency and alignment with project objectives. The dissemination and exploitation measures outlined in this plan are closely integrated with the broader strategy defined in Deliverable D11.1 – Communication, Dissemination and Exploitation Plan. In particular, D11.1 provides a detailed mapping of target audiences, communication channels, and Key Exploitable Results (KERs), along with open licensing models and tailored exploitation routes. The two documents are therefore complementary, ensuring both strategic alignment and operational coherence in the project's approach to knowledge valorisation and public engagement.

3.6 Risk Management

Potential risks related to IPR will be proactively managed:

- **Freedom to Operate (FTO) Analyses**: Assessments will be conducted to ensure that the exploitation of results does not infringe on existing rights.
- **Conflict Resolution**: Mechanisms will be in place to address disputes related to IPR, with escalation procedures defined in the Consortium Agreement.
- **Monitoring and Compliance**: Regular reviews will be conducted to ensure adherence to IPR policies and to address emerging issues promptly.

3.7 Exploitation and Sustainability Strategy

The exploitation strategy within AUTOMATA is aimed at ensuring that results produced by the project generate a tangible impact both during and after the project lifetime. The roadmap developed in D11.1 complements the present plan by detailing how dissemination outputs will directly inform exploitation pathways. It connects intellectual property governance with specific actions such as the structuring of service models, creation of spin-offs, and deployment of technical assets under open and scalable licensing terms. The consortium adopts a dual-track approach combining commercial and non-commercial routes of exploitation:

- **Commercial pathways** include potential licensing of components developed during the project (e.g. software modules, robotic tools), joint ventures with cultural heritage institutions, or integration of project outputs into existing services offered by partners.
- **Non-commercial pathways** involve integration into academic curricula, adoption by museums and public institutions, and contribution to public knowledge infrastructures such as ECCCH.

The project will also explore synergies with SMEs, research infrastructures, and standardisation bodies to ensure that technical outputs can be adopted and maintained beyond the end of the project.

To support sustainability, a roadmap detailing ownership, hosting, licensing, and maintenance responsibilities for project outcomes may be developed during the final phase of the project (WP12), aligned with the activities planned between M44 and M54.

3.8 Impact Monitoring and Indicators

To assess the success and uptake of the IPR and knowledge management strategy, AUTOMATA defines the following indicators:

- Number of open-access publications submitted and accepted;
- Volume of data produced and published with FAIR-compliant metadata;
- Software downloads and usage metrics. Preliminary usage metrics (e.g. GitHub downloads, repository activity, issue tracking) will be monitored during the project lifetime. However, as adoption is expected to grow after the release of stable public versions (M51–M54), comprehensive usage statistics will be collected and analysed post-project, in line with FAIR and Open Science monitoring principles;
- Third-party reuse of project outputs (e.g. citations, reuse of datasets);
- Number of access requests to licensed materials (if applicable);
- Engagement statistics from dissemination events and workshops. They will include participant numbers, affiliation profiles, level of interaction (e.g. Q&A, live polling), and post-event feedback. These indicators will inform the effectiveness of the project's outreach and knowledge transfer efforts.

These indicators are fully aligned with the performance metrics outlined in the CDE Plan (D11.1, section 9), which include web analytics, social media engagement, and newsletter outreach monitored through standard platforms (Google Analytics, Instagram Insights, LinkedIn Analytics, etc.). These indicators will be reviewed annually and included in the periodic reporting.

3.9 Roles and Responsibilities

To support the effective implementation of the IPR and knowledge management strategy, the consortium has identified a set of operational reference roles. While not formally defined in the Grant Agreement, these assignments reflect the partners' specific expertise and contributions across relevant work packages:

- **IPR contact point (UNIPI)**: acts as the main reference for legal and administrative aspects of IPR, including ownership clarification, access rights coordination and internal policy alignment.
- **Exploitation contact point (QB)**: supports the identification of exploitable results, in particular those related to the robotic system, and liaises with partners for technology transfer and service models.
- **Open Science and Data Management contact point (UoY)**: oversees the implementation of FAIR principles, open access compliance, and data stewardship, including metadata quality and repository strategy, in coordination with WP10 and WP11.

These roles are designed to foster coordination across technical, legal and dissemination activities, while allowing flexibility in the internal organisation of the partners involved.

3.10 Extended Risk Management for IPR

In addition to the general risk register, AUTOMATA will maintain an IPR-specific risk matrix, which will track:

- Potential IPR overlaps and infringement risks (mitigated by FTO checks);
- Delays in joint ownership negotiations (addressed through predefined templates);
- Ambiguities in Background ownership (resolved through Consortium Agreement updates);
- Risks related to premature dissemination (mitigated by internal review procedures).

This matrix will be reviewed quarterly by the Management and Technical Board.

4 Conclusions

The AUTOMATA IPR and Knowledge Management Plan provides a comprehensive, transparent, and strategic framework to ensure that the knowledge and innovations generated throughout the project are properly protected, managed, disseminated, and exploited.

By adopting a structured approach grounded in Open Science and FAIR data principles, the plan fosters a culture of collaboration, ethical knowledge sharing, and responsible innovation. It balances the imperative to protect valuable intellectual assets with the need to promote openness, ensuring that all software is released under recognised open-source licences and that all datasets are made available as open data.

The definition of specific roles, risk monitoring procedures, and measurable impact indicators strengthens the operational dimension of the plan, offering clear pathways for implementation and sustainability. Through explicit licensing strategies, detailed access protocols, and mechanisms for dispute resolution, the plan also mitigates legal uncertainty and enhances compliance with Horizon Europe expectations.

This deliverable will be continuously reviewed and refined to respond to emerging needs and opportunities. Ultimately, the AUTOMATA IPR and Knowledge Management framework is designed to maximise the long-term value and reach of the project's outputs, supporting their adoption in both research and practice, and ensuring their preservation and relevance beyond the project's duration.

This deliverable should be read in conjunction with Deliverable D11.1 – Communication, Dissemination and Exploitation Plan, which complements the present document by detailing audience strategies, visual identity, stakeholder engagement, and the operational roll-out of data publication and impact monitoring. Together, they define the project's full alignment with Horizon Europe's expectations regarding knowledge valorisation, Open Science, and long-term sustainability.