Grant Agreement No: 687591

Big Data Analytics for Time Critical Mobility Forecasting

datAcron

D8.1 Project Handbook

Deliverable Form	
Project Reference No.	H2020-ICT-2015 687591
Deliverable No.	8.1
Relevant Work Package:	WP 8
Nature:	R
Dissemination Level:	PU
Document version:	3.0
Due Date:	29/02/2016
Date of latest revision:	25/02/2016
Completion Date:	
Lead partner:	UPRC
Authors:	George Vouros
Reviewers:	Maria Halkidi (UPRC)
Document description:	This deliverable documents the main project procedures. These procedures have been presented and agreed at the kickoff meeting chaired by the coordinator.
Document location:	Filestore : /datAcron/WP8/Deliverables

History of changes

Version	Date	Changes	Author	Remarks
1.0	16.12.2015		George Vouros	1st draft
1.5	05.02.2016	Refinements on the nominated members of committees and boards, filestore and teleconference facilities available	George Vouros	
2.0	19.02.2016	Refinements after internal review, comments received by partners and addition of the executive summary	George Vouros	
3.0	25.02.2016	Addition of the Ethics Advisor, a refined procedure for risks, issues and opportunities, and Annex	George Vouros	Final

EXECUTIVE SUMMARY

This deliverable documents the main project objectives, project organizational structure and governance, roles and responsibilities, procedures, workplan and meetings. It acts as a reference source for all consortium members, covering many of the day-to-day activities and providing links to further information where required. Secondly, it aims to standardize various elements of the project e.g. project reports, deliverables, file naming conventions etc. through the use of agreed procedures and templates where relevant.

TABLE OF CONTENTS

LIST OF FIGURES

1. INTRODUCTION

1.1 Purpose and Scope

The datAcron Project Handbook has two main functions. Firstly, it acts as a reference source for all Consortium members, covering many of the day-to-day activities and providing links to further information where required. Secondly, it aims to standardize various elements of the project e.g. project reports, deliverables, file naming conventions etc. through the use of agreed procedures and templates where relevant.
This Handbook is delivered in M02 of the project, however it may be evolved by identifying further needs and by establishing best practices throughout dataACRON lifetime.

For the avoidance of doubt, the Grant Agreement and Consortium Agreement take precedence over this document.

1.2 Legal Basis

The project operates within the Horizon 2020 Framework Programme.
The Grant Agreement with the Commission No. 687591 is in operation. The current version of the Grant Agreement is file “Grant Agreement-687591-datAcron.pdf” and is dated 20/10/2015 on the top of each page.
A Consortium Agreement has also been signed by all partners.

1.3 Consortium Partners

1. UNIVERSITY OF PIRAEUS RESEARCH CENTER (**UPRC**)
2. FRAUNHOFER GESELLSCHAFT ZUR FORDERUNG DER ANGEWANDTEN FORSCHUNG E.V. for ist Fraunhofer Institute for Intelligent Analysis and Information Services IAIS (**FRHF**)
3. NATIONAL CENTER FOR SCIENTIFIC RESEARCH "DEMOKRITOS" (**NCSR'D'**)
4. ECOLE NAVALE GROUPEMENT INTERET PUBLIC (**NARI**)
5. NATO SCIENCE AND TECHNOLOGY ORGANISATION (**CMRE**)
6. BOEING RESEARCH & TECHNOLOGY EUROPE S.L.U. (**BRTE**)
7. CENTRO DE REFERENCIA INVESTIGACION DESARROLLO E INNOVACION ATM, A.I.E. (**CRIDA)**
8. IMIS GLOBAL LIMITED (**IMISG**)

1.4 Important Contacts

datAcron Project Coordinator

Prof. George Vouros
Dept of Digital Systems,
University of Piraeus, Greece
Email: georgev@unipi.gr
Tel: +30 210 4142552

datAcron EC Project Officer

Saila Rinne
Programme Officer – EU Policies
Directorate-General Communications Networks, Content and Technology (DG CONNECT)
Unit G3 Data Value Chain EUFO 1179, 10 rue Robert Stumper, L-2557 Luxembourg
Tel.: (+352) 4301 35446
Email: Saila.Rinne@ec.europa.eu

Please note that the details of the Project Officer are provided here for information. However, all contact with the Project Officer relating to the project should be through the Coordinator.

2. RESEARCH OBJECTIVES, SCOPE, APPROACH, EXPECTED RESULTS.

2.1 Research Objectives, Scope

Our vision is to advance the management and integrated exploitation of voluminous and heterogeneous data-at-rest (archival data) and data-in-motion (streaming data) sources, so as to significantly advance the capacities of systems to promote safety and effectiveness of critical operations for large numbers of moving entities in large geographical areas.

datAcron will address requirements from the ATM and maritime domains by developing advanced tools for detecting and visualizing threats and abnormal activity over heterogeneous, voluminous, fluctuating, and noisy data streams from thousands of moving entities in large geographic areas, correlating them with data expressing entities' characteristics, geographical information, weather data, patterns of mobility in specific areas, regulations, intentional data (e.g. planned routes) etc, in a timely manner.

The main objectives of datAcron are the development of **highly scalable methods** for advancing

- the **real-time detection and forecasting accuracy of moving entities' trajectories**,
- the **real-time recognition and prediction of important events** concerning these entities,
- together with a **general visual analytics infrastructure supporting all steps of the analysis through appropriate interactive visualizations**.
- **advanced processing of data close to the data sources** -following the in-situ data processing paradigm - producing streaming data synopses at a high-rate of compression,
- **advanced spatio-temporal data integration and management** solutions.

2.2 Approach

(excerpt from the DoA)

The rationale of the proposed work plan structure is summarized as follows and depicted in Figure 1. The project starts (M1-M6) with the detailed use-cases' scenarios specification (WP5 and WP6) as well as with the requirements analysis of datAcron overall architecture (WP1). The work in the respective work packages WP1, WP5 and WP6 is done in parallel and in close collaboration of parallel tasks 1.1, 5.1 and 6.1, although each work package has its own focus. WP1 is a core technical work package and provides a solid foundation for integrating the results from the core research and innovation WPs (WP2-WP4). It carries out requirements analysis, architecture specification, software design and overall evaluation/testing tasks for the datAcron integrated system, in order to ensure the coherence of the datAcron research results and that the overall architecture meets the requirements set by the use cases w.r.t. Big Data. WP5 and WP6 motivate and drive the R&D activities and ensures the exploitability of the project results by defining realistic use cases at the very beginning of the project and validating the project outcomes in the end, via the deployment and fine-tuning of the datAcron integrated system prototype to the purposes of each individual case study.

While WP1 addresses the research challenge of data management and provides the solid platform for all further developments, the challenges related to analytics are addressed in WP2 to WP4 (M4-M30). Thus, part of WP1 and WP2-WP4 respectively conduct research on 4 core layers of architecture: a) Data management (WP1), integration and optimized query answering functionality for data-at-rest and data-in-motion provided by data sources as well as trajectories and events detected/forecasted by datAcron components, b) Analytics for detecting and forecasting trajectories in real-time, also performing analytics over trajectories (WP2), and c) Analytics for detecting and forecasting events in real-time (WP3), with capacities for handling uncertainty and noisy data, and adaption to changing event patterns, (d) Interactive visual analytics for interactive data exploration, visual analytics for the detection and prediction of trajectories.

Each WP will investigate the conceptual foundations, identify the appropriate methods, and develop the relevant models, algorithms and software prototypes. Although each research area is relatively self-contained (except the ones in WP1), the integrity of the four (4) research work packages is critical to the success of datAcron. This is ensured by inter-WP task synchronization and software integration

in WP1. The ways tools interact and interoperate is specified in WP1 w.r.t. the requirements stated, and these are iteratively elaborated and developed in the datAcron infrastructural software.

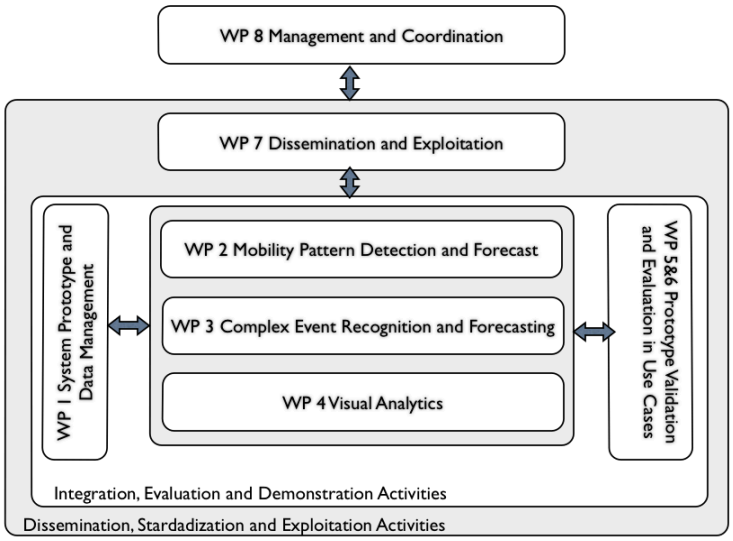

Figure 1 WP relationships and grouping in actions

WP7 carries out the important dissemination, standardization and exploitation activities based on the results of WP1-WP6. WP7 will fully harness the versatility of the datAcron consortium to maximize our visibility in relevant communities. Finally, WP8 oversees and coordinates the project progress. It performs consortium and RTD coordination, conducts day-to-day management of the project, and enforces quality assurance measures.

2.3 Expected Results

datAcron will produce novel methods for:

- Scalable, fault-tolerant cross-streaming data integration, collection, and processing, following the in-situ processing paradigm.
- Automatic linking of data towards generating coherent views on integrated data.
- Efficient distributed management and querying of integrated spatio-temporal data.
- Cross-streaming, real-time detection and summarization of moving entities' trajectories.
- Data analytics over moving entities' trajectories.
- Short- and long-term real-time trajectories forecasting.
- Real-time event recognition and forecasting, taking full advantage of the data provided.
- Machine learning methods for adapting event patterns in dynamic settings.
- Resilient real-time event recognition and forecasting algorithms addressing the lack of veracity of the data.
- Visual analytics methods for data exploration and assessment of data quality considering data-in-motion and data-at-rest from multiple sources.
- Visual analytics methods for interactive pattern extraction from data-in-motion and data-at-rest coming from multiple sources
- Visual analytics methods for user-guided model building and validation
- Visual analytics methods for building situation overview and situation monitoring.

datAcron plans to validate all technologies developed in various scenarios of data growth, variety, velocity, veracity – quality in the ATM and maritime domains.

3. MANAGEMENT STRUCTURE AND GOVERNANCE

The structure, presented in Figure 2 and detailed below, incorporates traditional project management roles with flexible communication and work flows, matches the complexity of the project, and has been developed to:

- Ensure effective and transparent management
- Establish clear procedures for taking decisions and resolving conflicts effectively and efficiently;
- Establish quality control procedures with respect to all outputs and deliverables;
- Ensure the project proceeds within the framework of the project budget and according to administrative, financial and legal principles defined by European and national regulations;
- Ensure that the participants conform to their obligations under the contract and the consortium agreement;
- Manage background and foreground intellectual property;
- Address ethical issues appropriately.

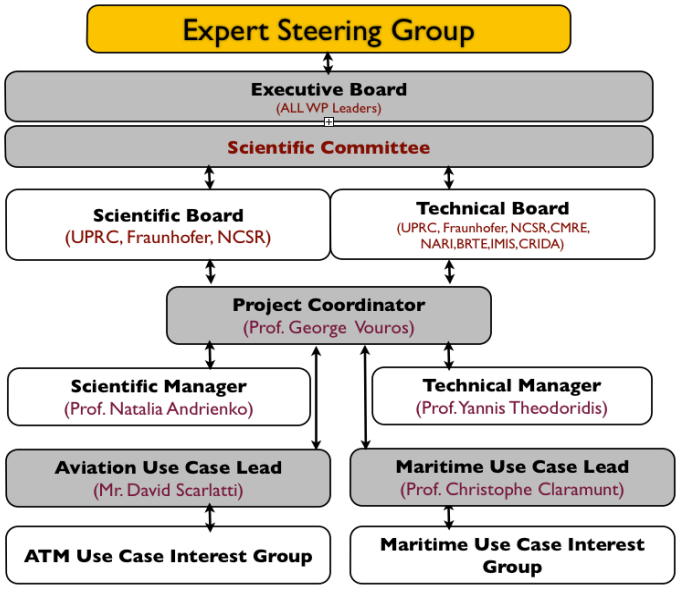

Figure 2: Management Structure of the datAcron project

3.1. Project Coordinator (UPRC – Prof. George Vouros)

This role is responsible for the execution and strategic management of the project. He will implement the agreed strategy, oversee the choice of techniques, and supervise the monitoring of the results and co-ordinate the quality assurance function. He will also implement the decisions taken by the other decision-making bodies of the project and he will be in charge of all the communication with the European Commission. EC communicates with the project only through the project coordinator. Specifically, the responsibilities (also detailed in section 6.4.2. of the Consortium Agreement) are:

- Monitoring overall implementation of the project
- Acting as primary contact for the European Commission
- Chairing meetings of the Executive Board and Expert Steering Group
- Submitting reports and deliverables to Project Officer
- Collation and submission of cost claims and audit certificates
- Collating WP reports to produce overall quarterly project reports
- Receiving and distributing payments from the European Commission
- Financial and contractual administration
- Acting upon decisions of the Executive Board
- Producing financial reports as per H2020 reporting requirements

- Reviewing progress in conjunction with the Executive Board
- Checking that progress and deliverables are produced according to the work plan
- Advising the relevant bodies on delays, project issues and problems
- Overall datAcron Risk Management
- Writing periodic management reports

3.2. Project Scientific Manager (FRHF – Prof. Natalia Andrienko)

This role is responsible for the

- Scientific vision of the project
- Scientific supervision of the work packages
- Planning and control of activities
- Risk management of scientific matters
- Chairing meetings of the Scientific board

The Scientific Manager is responsible for guiding all activities related to the research of the project on data management and analytics topics.

3.3. Technical Manager (UPRC – Prof. Yannis Theodoridis)

This role is responsible for the

- Technical vision of the project
- Monitoring and coordinating the technical developments
- Coordinating the seamless integration of all components and services
- Risk management of technical matters
- Chairing the meetings of the Technical Board

The Technical Manager is responsible for guiding all activities related to the technical activities of the project on data management and analytics topics, towards the integrated datAcron prototype that will be deployed for the purposes of use cases.

3.4. Scientific Board

This role is responsible for making scientific decisions that the scientific manager cannot make by himself (individually), resolving conflicts raised by scientific issues or partners. The scientific board, consists of the representatives of partners responsible for the novel contributions of datAcron, and is also responsible for bringing to the higher levels of management (Executive board) important issues that cannot be solved by itself. Also, it is responsible for communicating and coordinating important high-level decisions to the scientific manager for implementation.

The Scientific Board is currently made up of the Scientific Manager and nominated representatives of partners responsible for WPs 1-4 (UPRC, NCSR'D', FRHF) as follows:

1. UNIVERSITY OF PIRAEUS RESEARCH CENTER (**UPRC**):
    - Christos Doulkeridis, WP1 Leader, or George Vouros
    - Nikos Pelekis, WP2 Leader, or Yannis Theodoridis
2. FRAUNHOFER GESELLSCHAFT ZUR FORDERUNG DER ANGEWANDTEN FORSCHUNG E.V. for ist Fraunhofer Institute for Intelligent Analysis and Information Services IAIS (**FRHF**)
    - Gennady Andrienko, WP 4 Learder, or Georg Fuchs
3. NATIONAL CENTER FOR SCIENTIFIC RESEARCH "DEMOKRITOS" (**NCSR'D'**)
    - Elias Alevizos, WP 3 Leader, or Alex Artikis

The project Scientific Manager may also invite other WP leaders and beneficiaries' group leaders.

3.5. Technical Board

This role is responsible for making technical decisions that the technical manager cannot make by himself (individually), resolving conflicts raised by technical issues or partners. The technical board, consists of nominated representatives of the technical partners, and is also responsible for bringing to the higher levels of management (Executive board) important issues that cannot be solved by itself.

Also, it is responsible for communicating and coordinating important high-level decisions to the technical manager for implementation.

The Technical Board is currently made up of the Technical Manager and the following nominated representatives of UPRC, NCSR, FRHF, CMRE, NARI, BRTE, CRIDA, IMISG, acting as WP leaders, or playing important role in WP tasks:

1. UNIVERSITY OF PIRAEUS RESEARCH CENTER (**UPRC**):
   - Christos Doulkeridis, WP1 Leader, or George Vouros
   - Nikos Pelekis, WP2 Leader, or Yannis Theodoridis
2. FRAUNHOFER GESELLSCHAFT ZUR FORDERUNG DER ANGEWANDTEN FORSCHUNG E.V. for ist Fraunhofer Institute for Intelligent Analysis and Information Services IAIS (**FRHF**)
   - Georg Fuchs FRHF Group Leader or Gennady Andrienko, WP 4 Learder
   - Michael Mock
3. NATIONAL CENTER FOR SCIENTIFIC RESEARCH "DEMOKRITOS" (**NCSR'D'**)
   - Elias Alevizos, WP 3 Leader, or Alex Artikis
4. ECOLE NAVALE GROUPEMENT INTERET PUBLIC (**NARI**)
   - Christophe Claramunt, NARI Group Leader, WP5 Leader or Cyril Ray
5. NATO SCIENCE AND TECHNOLOGY ORGANISATION (**CMRE**)
   - Anne Laure Jousselme, CMRE Group Leader, WP 7 Leader or Melita Hadzagic
6. BOEING RESEARCH & TECHNOLOGY EUROPE S.L.U. (**BRTE**)
   - David Scarlatti, BRTE Group Leader, WP6 Leader, or Miguel Vilaplana
7. CENTRO DE REFERENCIA INVESTIGACION DESARROLLO E INNOVACION ATM,A.I.E. (**CRIDA)**
   - Jose Manuel Cordero Garcia, CRIDA Group Leader or Nicolas Souarez Tetzlaff
8. IMIS GLOBAL LIMITED (**IMISG**)
   - Ernie Batty IMISG Technical Expert

3.6. Executive Board (All Group and WP Leaders)

This role consists of all group and work package leaders (WPLs) who will manage the operational activities within their work packages, as well as of an independent ethics advisor, who will provide expert advise on ethics issues and report on these issues alongside the planned periodic reports. It is responsible for making the higher-level decision within the borders of the datAcron consortium, and collaborating with the Expert Steering Group (ESG) for seeking expertise advice on difficult and critical technical issues. It also monitors progress across partners in the WPs and ensures that the objectives, timescales and milestones are met. WPLs will be responsible for obtaining status/progress information from partners active within their work package for the specified reporting period.

The Executive Board is currently made up of the nominated representatives of UPRC, NCSR, FRHF, CMRE, NARI, BRTE, CRIDA, IMISG enlisted below

University of Piraeus Research Center (UPRC)		ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΕΙΡΑΙΩΣ ΚΕΝΤΡΟ ΕΡΕΥΝΩΝ ΠΑΝΕΠΙΣΤΗΜΙΟΥ ΠΕΙΡΑΙΩΣ
Contact 1	George Vouros georgev@unipi.gr	Project Coordinator, WP 8 Leader, UPRC Group Leader
Contact 2	Yannis Theodoridis ytheod@unipi.gr	Technical Manager
Contact 3	Christos Doulkeridis cdoulk@unipi.gr	WP 1 Leader
Contact 4	Nikos Pelekis npelekis@unipi.gr	WP 2 Leader

Fraunhofer-Gesellschaft zur Foerderung der Angewandten Forschung E.V (FRHF)		
Contact 1	Georg Fuchs Georg.Fuchs@iais.fraunhofer.de	FRHF Group Leader
Contact 2	Gennady Andrienko gennady.andrienko@iais.fraunhofer.de	WP 4 Leader
Contact 3	Natalia Andrienko natalia.andrienko@iais.fraunhofer.de	Project Scientific Manager
Contact 4	Michael Mock michael.mock@iais.fraunhofer.de	
Contact 5	Stefan Rueping stefan.rueping@iais.fraunhofer.de	

National Center of Scientific Research "DEMOKRITOS" (NCSR'D')		 
Contact 1	Elias Alevizos alevizos.elias@iit.demokritos.gr	WP 3 Leader
Contact 2	Alexander Artikis a.artikis@gmail.com	Deputy NSCR 'D' Group Leader/Presenter in KOM
Contact 3	George Paliouras paliourg@iit.demokritos.gr	NSCR 'D' Group Leader

Naval Academy Research Institute (NARI)		
Contact 1	Christophe Claramount christophe.claramunt@ecole-navale.fr	NARI Group Leader WP 5 Leader
Contact 2	Cyril Ray cyril.ray@ecole-navale.fr	

NATO STO- Centre for Maritime Research and Experimentation (CMRE)		
Contact 1	Dr. Anne Laure Jousselme Anne-Laure.Jousselme@cmre.nato.int	CMRE Group Leader WP 7 Leader
Contact 2	Prof. Jean-Guy Fontaine Jean-Guy.Fontaine@cmre.nato.int	General Supervisor
Contact 3	Dr. Melita Hadzagic Melita.Hadzagic@cmre.nato.int	
Contact 4	Dr. Elena Camossi	Dissemination POC

	Elena.Camossi@cmre.nato.int	

Boeing Research and Technology Europe (BRTE)		
Contact 1	David Scarlatti David.Scarlatti@boeing.com	BRTE Group Leader WP6 Leader
Contact 2	Vilaplana, Miguel miguel.vilaplana@boeing.com	
Contact 3	Pablo Costas pablo.costas@boeing.com	
Contact 4	Javier López javier.lopezleones@boeing.com	

Centro De Referentia Investigation, Desarrollo E Innovation ATM (CRIDA)		
Contact 1	Jose Manuel Cordero Garcia jmcordero@e-crida.enaire.es	CRIDA Group Leader
Contact 2	Nicolas Souarez Tetzlaff nstetzlaff@e-crida.enaire.es	

IMIS GLOBAL (IMISG)		
Contact 1	Trevor Evans trevor.e@imisglobal.com	IMISG Group Leader
Contact 2	Ernie Batty ernie.b@imisglobal.com	IMISG Technical Expert

datAcron Ethics Advisor		
Contact	Dr Gemma Galdon Clavell gemma.galdon@ub.edu	Independent Ethics Advisor

Workpackage Leaders are responsible for the deliverables and milestones for their WP. They are also responsible for reporting to the Executive Board primarily through the Coordinator and they should hold reviews with the WP partners, as required. As they are ultimately responsible for the delivery of the WP, they will be required to implement a project management regime consistent with this responsibility.

The independent datAcron ethics advisor, member of the datAcron Executive Board, according to the Description of Action will deliver the ethics management plan (D8.5), providing also follow-up and assistance throughout the project regarding ethical issues. She will also report on ethical issues participating to the completion of periodic reports.

Any partner member is able to attend meetings of the Executive Board, subject to the limitation that each partner only has one vote. Each representative shall be deemed to be duly authorised to deliberate, negotiate and decide on all matters listed in Section 6.3.6 of the Consortium Agreement. The Consortium Agreement contains details of the working voting rules and procedures for the Steering Committee and should be used as the reference document. In summary:

- Decisions shall be taken by the representatives of at least two-thirds (2/3) of the consortium partners present or represented
- Each partner shall have one vote
- Defaulting partners may not vote

Any partner may appoint a substitute or a proxy to attend and vote at any meeting.

Decisions shall be taken by a majority of two-thirds (2/3) of the votes of the partners present or represented.

3.7. Scientific Committee (SC)

This committee consists of external experts from relevant scientific, research and technical fields. The SC will need to meet annually with the Executive Board, virtually or physically, in order to review the project progress and achievements to date and will advise the project on its future paths. This is why the members of the SC are selected among key research figures of the Data Management, Visualization domains.

The list of people who have agreed to participate in the SC is as follows:

- Prof. Manolis Koubarakis, National Kapodistrian University of Athens.
- Prof. Kjetil Nørvåg, Norwegian University of Science and Technology.
- Prof. Dino Pedreschi, Universita di Pisa.
- Prof. Daniel Keim, Univ. Konstanz.
- Dr. Peter Pietzuch, Imperial College.

3.8. ATM/Maritime Use Case Interest Groups (UCIGs)

These two roles (one per domain) are created at the beginning and are further expanded with additional members during the lifetime of the project and consists of stakeholders from the maritime and aviation domains.

The UCIGs will need to meet with the Executive Board, virtually or physically.

Use Case Interest Groups will

- provide expert advise regarding use cases
- review the project progress and achievements for each of the use cases
- voluntarily, participate in the evaluation/validation of the technological solutions provided.

Members of UCIG will be provided with privileged access to project results.

An initial list of organizations who have agreed to participate in the UCIGs is as follows:

3.8.1. ATM Use Case Interest Group Members

Organization	Topics/Expertise/Contribution
EUROCONTROL	Provide expert advise, reviewing he project's progress and appraising achievements in the ATM use case, participation in validation and evaluation of the technological solutions.
Asociación Profesional de Controladores de Tránsito Aéreo, Spain	Provide expert advise, reviewing he project's progress and appraising achievements in the ATM use case, participation in validation and evaluation of the technological solutions.
JEPPESEN	Provide expert advise, reviewing he project's progress and appraising achievements in the ATM use case, participation in validation and evaluation of the technological solutions.

3.8.2. Maritime Use Case Interest Group Members

Organization	Topics/Expertise/Contribution
Ecole Nationale Supérieure de la Marine Marchand	Students who specialize in navigation will use datAcron for a dual purpose: For learning more on navigation, trajectories/routes, while in parallel will validate the system based on their knowledge (these have already attended 3 years courses and completed their 6 months internships), targeting to gaining more experience on navigation and patterns.
DCNS Research	DCNS will provide Three high-volume sets of recorded real maritime traffic standardised data / information, corresponding to several months of maritime traffic in the Mediterranean Sea, with the required software expertise to support the team partners in the use of these reference data sets. Operational expertise to define and interpret what are abnormal or suspicious behaviours in the context of Maritime traffic. The DCNS experts will liaise with a group of selected operational experts from Governmental administration, in order to elaborate the reference set of "operationally relevant alerts" as extracted from the recorded data / information sets. The use of the existing platform, with additional software modules and algorithms specifically developed for the evaluation and performance comparison phase of the project.

UCIGs are critical to review and further advise the definition of the detailed use case scenarios and the domain-specific key performance indicators for the technologies to be developed from the point of view of the domains, while they may also share data for validation/evaluation purposes, or participate in validation/evaluation experiments.

3.9. ATM Use Case Lead (BRTE– Mr. David Scarlatti)

This role is responsible for

- chairing meetings of the ATM Use Case Interest Group
- representing the ATM use case partners of the consortium in the management structure
- ensuring continued access in the ATM use cases components, data and expert advise that the project will need for evaluation and validation of solutions, starting as early as possible in the lifetime of the project (i.e. day 1).

3.10. Maritime Use Case Lead (NARI– Prof. Christophe Claramunt)

This role is responsible for

- chairing meetings of the Maritime Use Case Interest Group
- representing the Maritime use case partners of the consortium in the management structure
- ensuring continued access in the Maritime use cases components, data and expert advise that the project will need for evaluation and validation of solutions, starting as early as possible in the lifetime of the project (i.e. day 1).

4. COMMUNICATIONS

4.1. Email messages

When sending e-mails, it should be remembered that many people may be working on a number of different projects and are likely to receive numerous e-mails every day. This can make it difficult to quickly recognize the significance of an e-mail and also to find and segregate related e-mails. In order to ease this problem, datAcron related e-mails should **always** include in the subject title the name of the project (i.e. "datAcron") followed by a more specific description of the subject.

When sending e-mails with file attachments, please consider the size of the attachment. Very large attachments may not be accepted by the recipient server and even modest size attachments (around several MB) might rapidly cause e-mail quotas to be exceeded, particularly where recipients are away from the office for an extended period. Therefore, consideration should be given to uploading the relevant file to the project filestore instead of attaching it to the e-mail. When replying to an e-mail with a file attachment, please ensure that you delete the attachment unless the attachment is still required (e.g. if the reply is copied to a new group of people).

Finally, as a courtesy, please include your contact details on every e-mail that you initiate.

4.2. Email lists

To facilitate rapid e-mailing within the consortium, the following e-mail reflector (list) has been created:

Table 1: Email lists

List name	Members	Address
datacron	All project participants	datacron@unipi.gr
datacron-keypersons	Beneficiaries' points of contact	Datacron-keypersons@unipi.gr

In addition to these, an e-mail reflector for each Workpackage WP1 – WP8 and project committee will set up, in the form of datacron-wp*x*@unipi.gr (where *x* is the number of the Workpackage) and datacron-sc/sb/tb/Xucig@unipi.gr (sc: scientific committee, sb: scientific board, tb: technical board, ATMucig, MARucig: for the use case interest groups).

Further e-mail reflectors may be set up on request. Any queries related to these lists, requests for additions or for new lists should be addressed to the Project Coordinator.

A current list of the members of each list is maintained on the project filestore under "Consortium Members & Mailbases". Note that, if you send an e-mail to a list that you are a member of, you will not receive a copy.

4.3. Conference Calls

It is recommended that all individuals who are able to do so should install an internet-based voice, video and chat facility for conference calls, e.g. Skype, so that all members of the consortium are able to communicate freely and directly with each other. Skype provides a facility for limited conference calls (up to 25 users) with video and screen-sharing facilities. Skype can be downloaded from www.skype.com.

Alternatively, teleconferencing facilities may be used, or simple audio conference facilities.

UPRC uses the teleconferencing facilities provided by the Greek Research and Technology Network (GRNET: https://www.grnet.gr/). The teleconferencing service provided by GRNET is e:Presence (http://epresence.grnet.gr/). The user manual for participating in a teleconference is provided in http://epresence.grnet.gr/docs/usermanual1.3_en.pdf, and a short version of this in http://epresence.grnet.gr/docs/usermanual1.3_short_en.pdf.

The invitation to participate in a teleconference will be initiated by UPRC well in advance, and will be sent through an e-mail to each participant by no-reply@grnet.gr with the subject "[epresence] Πρόσκληση σε τηλεδιάσκεψη (Invitation to teleconference)", where all the necessary information regarding the teleconference is included (subject, starting/ending date and time, moderator name, participation and confirmation hyperlinks).

Audio conferences may be scheduled. UPRC cannot provide such services. But other datAcron partners (e.g. BRTE) do.

5. PROJECT FILESTORE

A project filestore has been set up. This will act as a file transfer and archive facility. Access to the filestore is controlled via a username and password. These are notified to users separately and are not included here in order that this document may be widely disseminated.

Important project files will be stored and maintained on the filestore, e.g. the current version of the Grant Agreement, current budget allocation, formal deliverables, minutes of important meetings, etc.

The filestore includes a folder structure and most project related files will fit within this. Partners should not delete any of the existing folders. However, partners are encouraged to add further sub-folders where relevant, e.g. for each additional meetings or for technical WP information. Folders may also be created for storing temporary files where, for example, these are too large to circulate by e-mail.

All project participants have already access to the filestore. In order for any additional member to access the filestore, a nominated representative of the corresponding beneficiary will need to send an email to the Project Coordinator specifying

- Name, Surname
- email address
- role in the project

The new member will receive a personal notification with her/his credentials to access the filestore. These are personal and must be kept securely.

Each consortium member can connect and access the filestore in any of the ways described in the Annex of this document.

6. FILE NAMING AND VERSION CONTROL

It is essential that every document circulated to other partners in the consortium includes a version number and date. This will help to avoid the situation where partners are working with old or obsolete versions of documents.

In terms of file names, it is difficult to have a fixed file naming convention which can cover every situation. However, the guidelines below should be followed as much as possible:

1. The filename should be descriptive of the contents and should include the project name e.g. “datAcron_UPRC_EDBT_2015.pptx” for a presentation by UPRC at an EDBT conference in 2015.

2. Where a document is specific to a particular date, this date should be included in the filename in the form ‘ddmmyyyy’. For example, minutes of a WP4 meeting on 1st October 2015 will be called “datAcron_WP4 Minutes_01102015.docx”.

3. Where a document is likely to be produced in a similar format by various partners, the partner short name should be included in the filename e.g. “datAcron_Q1 Report_UPRC” for UPRC’s first quarterly partner report.

4. Where different versions of a document are used, e.g. for deliverables and reports, the version number should be included at the end of the filename. For draft documents, the version number should start at v0.1, and increment in 0.1 steps. Once the document is formally issued, the version should change to v1.0 and then increment in 0.1 steps for minor changes. For a major change, the version will change to v2.0.

5. All documents must have a history of changes with detailed indications and remarks on changes made between subsequent versions, while the use of the track changes feature in Word is recommended to assist the document author/owner.

6. When commenting on a document provided by another partner, the filename should be changed to include the initials of the person or short name of the partner making the changes e.g. “datacronD6.1_v1.0_gv.docx” if changes to v1.0 of D6.1 have been made by gv (e.g George Vouros).

7. Only the originating author or owner of a document should increment the version number.

7. PROJECT REPORTING

All partners are required to complete a six-months partner report detailing progress against each task. Templates will be provided for these reports, which should be sent to the relevant WP leaders by the 15th of the month following the end of each period.

The Project Coordinator will compile the six-months partner reports into an overall six-months project report. This will also include information on actual effort expended vs predicted.

Copies of the relevant templates are available on the project filestore under "Templates". The templates will be designed to provide the information that is required for the Periodic Report for the Commission. This will simplify the reporting at the end of each period.

The consortium will submit a Periodic Report to the Commission (within 60 days after the end of each reporting period) containing at least the following:

- Publishable summary
- Project objectives for the period
- Work progress and achievements during the period
- Deliverables and milestones tables
- Details of Project Management activities
- Financial statement (Form C) from each partner including an explanation of use of resources
- Audit certificates (if required)

More details on the reporting requirements can be found in the H2020 Reporting Guidelines, a copy of which will be placed on the filestore under "EC Guidelines".

7.1. Reporting Periods

The project has two formal reporting periods, as follows:

1) 1st January 2016 (Month 1) – 30th June 2017 (Month 18)

2) 1st July 2017 (Month 19) – 31st December 2018 (Month 36)

7.2. Certificates of Financial Statements & Cost Claims

Each partner must provide a Certificate of Financial Statements (CFS) for each period unless the financial contribution that they are claiming (for all periods for which a certificate has not been provided) is less than €325,000.

A guide to the CFS is available on the filestore under "EC Guidelines".

8. DELIVERABLES AND MILESTONES

Deliverables and milestones should be completed on time, allowing also ample time (10 to 15 days) for review. Progress on deliverables or milestones should be reported in the quarterly partner reports and WP reports for the period in which they are due. If any deliverables or milestones due in the period are late, an explanation for this **MUST** be given, as well as any mitigation actions and the anticipated completion date. For deliverables which are not written reports (e.g. prototypes), a brief written summary should nevertheless be produced to accompany the deliverable. A template for the deliverable reports will be produced and will be available on the filestore under "Templates".

8.1. Quality Control and Approval of Deliverables

To ensure that deliverables are of an appropriate standard, all deliverables will be reviewed by someone who has not been part of the core team developing the deliverable. The prime responsibility of a reviewer is to ensure that the deliverable is complete and of an appropriate standard. Typically, the Coordinator or any other member of the management group will also act as reviewer. The Coordinator will nominate a reviewer from the project members. The reviewer will then receive the final draft of the deliverable and provide the partner responsible for the deliverable and the relevant WP leader with a written response by e-mail indicating that the deliverable is ready for release or that elements of the deliverable require further attention giving details. The reviewer may also make minor corrections and format adjustments directly. The reviewer should respond within 5 working days of receiving the draft deliverable. If revisions are required, then the above process is repeated. Once the deliverable has been accepted, the details of the reviewer will be added to the cover page.

The review process is part of the preparation of the deliverable and WP leaders should take appropriate steps to ensure that the review is completed and the deliverable issued before the due date. The due date is the last day of the month that is specified for the deliverable in the DoA.

The Project Coordinator will circulate the final deliverable to the consortium and also place a copy on the project filestore. The Coordinator will submit all deliverables to the Commission.

If the WP leader and the reviewer cannot agree to release the document, the matter will be referred to the Executive Board for a binding decision.

9. GRIEVANCE and CONFLICT RESOLUTION PROCEDURES

9.1. Conflict resolution

In the case of a technical, financial or procedural conflict arising among partners, there is a principle of amicable settlement whenever possible at the lowest decision making body. If there is a dispute within a Workpackage, the WP leader should in the first instance try and resolve the issue, with the aid of the Coordinator if necessary. Only if a resolution is not possible should the matter be raised with the Executive Board. The Coordinator should help in the conflict resolution as necessary. Failing such a resolution, the Executive Board will discuss the issues and vote on a resolution to achieve a binding solution. If necessary, individual partners can seek to convene an extraordinary meeting of the Executive Board, and all partners are able to put resolutions to that board.

9.2. Grievance Procedure

Should a partner wish to complain about any member of the Consortium, the first action should be to document, in detail, the grievance, communicating this in private to the Coordinator. The individual concerned will then be given a right to reply to the complaint, again, in private. The Coordinator will then work to resolve the complaint to the satisfaction of both parties. Partners should refrain from making personal attacks or remarks against any individual.

10. PUBLICATIONS CLEARANCE PROCEDURE

Some information on the publication clearance procedure is contained in section 8.3 of the Consortium Agreement and Article 29 of the Grant Agreement. The preliminary procedure is detailed below.

During the course of the project many partners will disseminate information about the project through (not an inclusive list):

- presentations at public events
- posters at public events
- submission of articles for publication in professional and other journals
- other means

There is a duty within the consortium to ensure that information is not disclosed that partners would regard as proprietary, or that they may be using to prepare patent applications. If this type of information inadvertently becomes public, then any subsequent patent applications relying on this information would be invalid. Any information prepared for public dissemination must be made available for review by any partner whose interests may be affected in advance of its submission for publication, i.e. in good time to review it and make comments and changes if necessary. The partner wishing to publish, present or disclose information about the project must follow the correct procedure as summarized below. This is documented in more detail in the Consortium Agreement, which takes precedence.

- The partner wishing to publish shall forward an abstract and/or draft presentation to the whole consortium.
- As a general rule, the time-limit for prior notice of any such dissemination activity to be given to the other partners shall be thirty (30) days.
- Following receipt of the aforementioned notification, any of the partners may object to such dissemination activity within ten (10) days from the date on which they received such notification.
- Should any partner fail to reply within the said period, it shall be deemed that such partner does not object to the relevant publication.

An objection is justified if:

- The objecting partner's legitimate academic or commercial interests would be significantly harmed by the publication; or
- The protection of the objecting partner's Foreground or Background is adversely affected.

The objection has to include a precise request for necessary modifications. If an objection has been raised, the involved partners shall discuss how to overcome the justified grounds for the objection on a timely basis (for example by amendment to the planned publication and/or by protecting information before publication).

A partner shall not include in any dissemination activity another partner's Results or Background without obtaining the owning partner's prior written approval, unless they are already published.

Please note that all publications **MUST** acknowledge the funding from the EU. A suitable form of words is "The research leading to these results has received funding from the European Union's Horizon 2020 Programme under the datAcron project (grant agreement no. 687591)".

Also, any dissemination of results must indicate that it reflects only the author's view and that the Commission is not responsible for any use that may be made of the information it contains.

11. PROCEDURE FOR IP PROTECTION AND EXPLOITATION

The partner wishing to seek protection should address the concerns of the objecting partner and, if the claim is legitimate, negotiate a reasonable solution.

Intellectual Property protection and access rights are detailed in the Grant Agreement, the Consortium Agreement and Guide to IP in Horizon 2020, all of which can be found on the project filestore.

Any partner within the consortium has the right to protect knowledge it has generated within the project. Partners should however declare their intention of seeking protection for IP generated within the datAcron project to the consortium. Partners must also take into account the contributions of other partners in the generation of such knowledge and come to an amicable and reasonable decision on it sole or joint ownership.

Partners wishing to seek IP protection should follow this procedure:

Partners should initially discuss their intention to seek protection with partners that have been involved with the generation of that knowledge.

After this the partner must inform the consortium by e-mail of the intention to seek protection, giving as much detail as possible without compromising the application.

A minimum of 30 days prior notice of application shall be given by the party wishing to seek protection.

Any partner may object within 10 days of receipt of the notice on the grounds that it has a legitimate claim to be included in the application or for some other good reason.

12. RISKS AND OPPORTUNITIES

Risks range from scientific, technical to dissemination and organizational/communicational.

Managing risks, issues and opportunities is a continuous process which focuses on:

- Identifying, describing and assessing risks, issues and opportunities;
- Maintaining risk, issue and opportunity information regularly;
- Defining actions to mitigate the risks and issues, or to promote the opportunities;
- Implementing these actions;
- Controlling their effectiveness.

Risks are potential events that may affect a Project or the Programme negatively, while **issues** are actual events. Thus, risks must be managed in order to avoid that they become issues (prevention) or that their initially expected effect becomes actual (protection). Issues must be treated as soon as possible and, where necessary, escalated to the appropriate level in the shortest timeframe. A risk may remain open, while an issue must be solved.

Transparency on risks, shared information and regular reporting on risks, issues and opportunities and the related actions (as part of the regular Projects progress reporting) are essential parts of the Programme management and must be given special attention by partners.

As with conflicts, there should be a settlement of any issue whenever possible at the lowest decision making body. If there is an issue within a Workpackage, the WP leader should in the first instance try and resolve the issue, with the aid of the Coordinator if necessary. Only if a resolution is not possible, or affects/it is affected by other work packages and tasks should the matter be raised with the Executive Board. Thus, when necessary, i.e. in function of its criticality or scope, a risk, an issue or an opportunity can be escalated or cascaded to the most appropriate level of responsibility, in mutual agreement, meaning that the responsibility to manage it is moved. The treatment actions as well can be defined for the owner or the risk, issue or opportunity itself and/or for other stakeholders.

The datAcron Grant Agreement specifies an initial list of risk descriptions with their probability (low, medium, high), the involved WPs and the impact (low, medium, high) to them, and a mitigation strategy for each risk, which summarizes corrective and/or preventive actions.

The Workpackage leaders, the Scientific Manager, the Technical Manager and the Project Coordinator are responsible for identifying risks, issues an opportunities that are within the scope of their responsibilities and also identify mitigation strategies and immediate actions.
All these risks must be communicated in a timely manner to the Project Coordinator and must be reported in the six-months periodic reports, for coordinating on the several issues, risks, threats and opportunities that arise.

13. WORKPLAN, DELIVERABLES, RESOURCES and SCHEDULE OF MEETINGS,

MONTH>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
WP 1	System Architecture and Data Management																																			
Task 1.1	Requirements Analysis																																			
Task 1.2				Architecture Specification																																
Task 1.3				Data Integration, management and storage																																
Task 1.4				Integrated prototype																																
Task 1.5													Evaluation of datAcron prototype																						
Deliverables						▲						▲						5▲												6▲						
WP 2	Mobility Pattern Detection and Forecast																																			
Task 2.1	Cross-streaming, real-time detection and summarization of moving object trajectories																																			
Task 2.2	Short- and long-term prediction of routes online																																			
Task 2.3													Data analytics over moving object trajectories																							
Deliverables																		▲▲												3▲						
WP 3	Complex Event Recognition and Forecasting																																			
Task 3.1	Adaptive Complex Event Recognition																																			
Task 3.2	Robust Complex Event Recognition																																			
Task 3.3													Complex Event Forecasting																							
Deliverables																		▲▲												3▲						
WP 4	Visual Analytics																																			
Task 4.1	VA methods for data exploration and assessment of data quality																																			
Task 4.2	VA methods for interactive movement detection																																			
Task 4.3	VA methods for interactive movement prediction																																			
Task 4.4													VA methods for building situation overview and situation monitoring																							
Task 4.5																			Evaluating VA methods in several scenarios and workflows																	
Deliverables																		4▲												4▲						▲
WP 5	Maritime Use Case																																			
Task 5.1	Scenarios																																			
Task 5.2	Data preparation and curation																																			
Task 5.3				Experiments specification																																
Task 5.4																			Maritime datAcron prototype set up																	
Task 5.5																			System Evaluation and Impact measurement																	
Deliverables			▲			▲						▲																		▲▲						▲
WP 6	Aviation Use Case																																			
Task 6.1	Scenarios																																			
Task 6.2	Data preparation and curation																																			
Task 6.3				Experiments specification																																
Task 6.4																			Aviation datAcron prototype set-up																	
Task 6.5																			System Evaluation and Impact measurement																	
Deliverables			▲			▲						▲																		▲	▲					▲
WP 7	Dissemination and Exploitation																																			
Task 7.1	Dissemination																																			
Task 7.2	Exploitation and Standardization																																			
Task 7.3													Training																							
Deliverables			▲															3▲												▲						▲▲
WP 8	Management and Coordination																																			
Task 8.1	Establishing the project management procedures																																			
Task 8.2	Management & Quality Control																																			
Task 8.3	Coordination & Concertation																																			
Deliverables		▲										▲												▲												▲

Project Meetings	M01	M02	M05	M10	M14	M18	M24	M30	M36

Resourses amd Deliverables are as described in the Grant Agreement with the Commission No. 687591.

Meetings foreseen are as follows:

M01: Project kick-off meeting. **Date:** January 2016 (held). **Type:** Physical
M02: Review of case studies and data sources. **Date:** February/March 2016. **Type:** TelCo
M05: DatAcron Integrated Prototype Requirements, review of WPs progress, Scientific committee Meeting. **Date:** May/June 2016. **Type:** Physical
M10: DatAcron Integrated Prototype Detailed Design, review of WPs progress, Specifications of Experiments per Use Case. **Date:** October 2016. **Type:** Physical
M14: Technical committee meeting, review of WPs 1-4 progress, **Date:** March 2017. **Type:** TelCo
M18: Review Meeting. **Date:** June/July. **Type**: Physical
M24: Overview of scientific and technical progress, review on use cases prototypes set up and system evaluation. **Date:** January 2018. **Type:** Physical.
M30: Overview of scientific and technical progress, review on use cases prototypes set up and system evaluation. **Date:** June 2018. **Type:** Physical/TelCo
M36: Final project Review meeting. **Date:** June 2018. **Type:** Physical

Other meetings (e.g. related to specific WPs) may also be scheduled as the project progresses.

14. MEETING MINUTES

The keeping of minutes for all project related meetings is extremely important as they are a record of decisions taken and actions required by partners in the project. It is the responsibility of the chair of the meeting to organize the taking of minutes.

A suggested template for minutes is located on the project filestore under “Templates”. The template has space for attendees, minutes, actions from the meeting and for the meeting agenda to be attached. The minutes are to be written up and circulated to all members of the meeting for comment and correction as soon as possible after the meeting. The author should set a deadline for response, e.g. 5 working days. After this period the minutes can be circulated to other relevant partners and uploaded to the filestore as a permanent record of the meeting. Minutes of all meetings should also be sent to the Coordinator.

ANNEX

(this page is intentionally blank)

Connecting to the datAcron Filestore

You can access, update and share files within the datAcron folder at the datAcron file store at **pincloud6.ted.unipi.gr**. Please be cautious on file updates and do not delete any contents.

Windows users

Windows users can access datAcron folder either using SMB or SFTP. Specifically,

a) using SMB protocol:

- Go to the Start menu and choose "Run" or hit Control+R from the Windows desktop
- Enter \\pincloud6.ted.unipi.gr and choose "OK"
- Enter your credentials and click on "OK"
- You may see all folders that you have access to. Start from the root folder which is named "datacron".

b) using SFTP: You may download and use any SFTP client. It is recommended to use portable clients (i.e. no need for installation third party software and/or administration rights for connecting to the server), e.g. `http://lifehacker.com/5039956/five-best-ftp-clients`.

For example, you can download from `https://winscp.net/eng/download.php` the portable version of WinSCP as shown in Figure 1.

For any client you may use, make sure that the selected protocol is SFTP (port 22) and the host address is pincloud6.ted.unipi.gr.

Figure 1: WinSCP portable application

- Unzip the downloaded file and run the executable file WinSCP.exe
- Select SFTP protocol and port 22,
- type the server's address pincloud6.ted.unipi.gr as shown in Figure 2,
- fill in the user credentials.

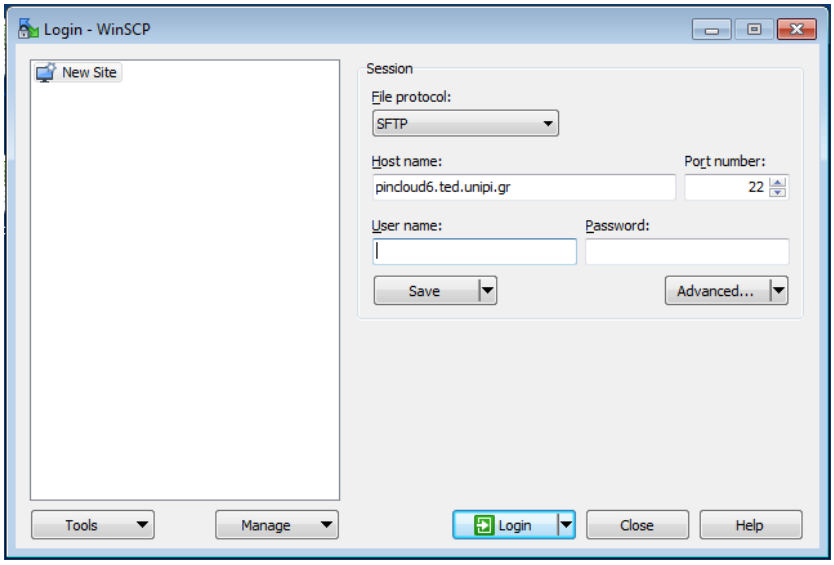

Figure 2: Connect to server using WinSCP

Mac OS/X users

Mac OS/X users can access datAcron folder either using SMB/AFP or SFTP. Specifically,

a) using SMB or AFP protocol:

- From the OS X Finder, hit Command+K to summon "Connect To Server"
- Choose the "Browse" button to browse the available network shares, double-clicking on the share to enter a login
  OR: In the "Server Address" field, simply enter afp://pincloud6.ted.unipi.gr (or smb://pincloud6.ted.unipi.gr) and enter your credentials.

b) using SFTP:

- Using command line utility for SFTP file transfer:
  * Type
    `$ sftp user@pincloud6.ted.unipi.gr`
    where `user` should be replaced with your username.
  * Press enter and type your password when prompted.

– Alternatively, you can use any GUI-based SFTP client, like `http://cyberduck.ch/`, `http://rsug.itd.umich.edu/software/fugu/`, `https://filezilla-project.org/`, or any of your convenience.

  For any client you may use, make sure that the selected protocol is SFTP (port 22) and the host address is pincloud6.ted.unipi.gr.

Linux users

a) using SMB protocol: Open file manager and type in the address bar:
`smb://pincloud6.ted.unipi.gr`
When prompted, enter your user credentials to establish the connection with the server.

b) using SFTP: You can use the command line utility for SFTP file transfer, typing at the terminal:
`$ sftp user@pincloud6.ted.unipi.gr`
where `user` should be replaced with the username.

Press enter and type your password when prompted.

Alternatively, you can have access using any GUI-based SFTP client, like `https://filezilla-project.org/`, or any of your convenience.

For any client you may use, make sure that the selected protocol is SFTP (port 22) and the host address is pincloud6.ted.unipi.gr.