**Name of the project: patons2hadrons**

**Table 3.1c: List of Deliverables[[1]](#footnote-2)**

Only include deliverables that you consider essential for effective project monitoring.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Number** | **Deliverable name** | **Short description** | **Work package number** | **Short name of lead participant** | **Type** | **Dissemination level** | **Delivery date**  **(in months)** |
| WP3.1 | New observables | Re-analysis of publicly available LEP and Belle II data for the construction of novel observables required for the advancement of hadronization models. | WP3 | JU | R | PU | 24 |
| WP3.2 | Tuning | Calibration of existing models through the tuning of state-of-the-art Monte Carlo parton-shower simulations to a broad spectrum of hadronic final-state observables, including those developed within the 'New Observables' work package. | WP3 | JU | R /DEC | PU | 36 |
| WP3.3 | New hadronization models | Enhancement of existing hadronization models and the development and integration of novel hadronization approaches (including QFT motivated as well as ML approaches) within Monte Carlo parton-shower frameworks. | WP3 | JU | OTHER/DEM | PU | 48 |

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| **KEY**  Deliverable numbers in order of delivery dates. Please use the numbering convention <WP number>.<number of deliverables within that WP>.  For example, deliverable 4.2 would be the second deliverable from work package 4.  **Type:**  Use one of the following codes:  R: Document, report (excluding the periodic and final reports)  DEM: Demonstrator, pilot, prototype, plan designs  DEC: Websites, patents filing, press & media actions, videos, etc.  DATA: Data sets, microdata, etc.  DMP: Data management plan  ETHICS: Deliverables related to ethics issues.  SECURITY: Deliverables related to security issues  OTHER: Software, technical diagram, algorithms, models, etc.  **Dissemination level:**  Use one of the following codes:  PU – Public, fully open, e.g. web (Deliverables flagged as public will be automatically published in CORDIS project’s page)  SEN – Sensitive, limited under the conditions of the Grant Agreement  Classified R-UE/EU-R – EU RESTRICTED under the Commission Decision No2015/444  Classified C-UE/EU-C – EU CONFIDENTIAL under the Commission Decision No2015/444  Classified S-UE/EU-S – EU SECRET under the Commission Decision No2015/444  **Delivery date**  Measured in months from the project start date (month 1) |

**Table 3.1d: List of milestones**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Milestone number** | **Milestone name** | **Related work package(s)** | **Due date (in month)** | **Means of verification** |
| M3.1 | New observables | WP3 | 24 | Publication |
| M3.2 | Tuning | WP3 | 36 | Publication |
| M3.3 | New hadronization models | WP3 | 48 | Prototype that is ‘up and running’ |

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| **KEY**  **Due date**  Measured in months from the project start date (month 1)  **Means of verification**  Show how you will confirm that the milestone has been attained. Refer to indicators if appropriate. For example: a laboratory prototype that is ‘up and running’; software released and validated by a user group; field survey complete and data quality validated. |

**Table 3.1e: Critical risks for implementation** #@RSK-MGT-RM@#

|  |  |  |
| --- | --- | --- |
| **Description of risk (indicate level of (i) likelihood, and (ii) severity: Low/Medium/High)** | **Work package(s) involved** | **Proposed risk-mitigation measures** |
| Access to archived LEP and Belle II data is critical for this work package Likelihood: Low, severity High | New observables | We can collaborate on OpenData portal initiative at CERN (ALEPH and DELPHI ongoing), EDM4HEP format (https://edm4hep.web.cern.ch/) collaboration with MIT group |
| Access to high-performance computing resources is critical for this work package  Likelihood: Low, severity: High | Tuning | The calculations will be performed using the Krakow PLGrid farm (plgrid.pl), to which JU has access. However, in case of problems, the large computing facilities from the partner institutes CERN and the University of Graz will be used. |
| Not enough manpower needed for the development of new hadronization approaches especially ML based models.  Likelihood: Medium, severity: Low | New hadronization models | Involve more groups |

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| **Definition critical risk:**  A critical risk is a plausible event or issue that could have a high adverse impact on the ability of the project to achieve its objectives.  **Level of likelihood to occur: Low/medium/high**  The likelihood is the estimated probability that the risk will materialise even after taking account of the mitigating measures put in place.  **Level of severity: Low/medium/high**  The relative seriousness of the risk and the significance of its effect. |

1. You must include a data management plan (DMP) and a ‘plan for dissemination and exploitation including communication activities as distinct deliverables within the first 6 months of the project. The DMP will evolve during the lifetime of the project in order to present the status of the project's reflections on data management. A template for such a plan is available in the [Online Manual](https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/om_en.pdf) on the Funding & Tenders Portal. [↑](#footnote-ref-2)