The Laser-hybrid Accelerator for Radiobiological Applications  
*R&D proposal for the preliminary, pre-construction phase*

Author list

# Executive summary

**Lead authors:** A. Giacca, K. Long

Indicative page count: 1

# Lay summary

**Lead authors:** H. Hall, G. Jones

Indicative page count: 1

# 1. Motivation

## 1.1 Overview

**Lead author:** A. Giacca, K. Long

Indicative page count: 1

## 1.2 Scientific case

**Lead authors:** J. Parsons, K. Kirkby, Y. Prezado, K. Prise

Indicative page count: 2.5

## 1.3 Technological advancement

**Lead author:** T. Greenshaw, H. Owen, J.B. Lagrange, M. Borghesi, P. McKenna, F. Romano

Indicative page count: 2

## 1.4 Impact

**Lead author:** F. Jamieson, W. Luk, P. Price, G. Schettino, S. Towe

Indicative page count: 2

# 2. LhARA; the Laser-hybrid Accelerator for Radiobiological Application

## 2.1 Overview

**Lead author:** A. Giacca, K. Long

Indicative page count: 0.75

## 2.2 Conceptual design

**Lead author:** W. Shields, T.S. Dascalu

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## 2.3 Staging

**Lead author:** K. Long, C. Whyte

## 2.3 Timeline for the LhARA initiative

**Lead author:** K. Long, C. Whyte, T. Kokalova-Wheldon

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# 3. Preparatory, pre-construction phase proposal

## 3.1 Project Management

**Lead authors:** C. Whyte, J. Parsons

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## 3.2 Laser-driven proton and ion source

**Lead authors:** E. Boella, N. Dover, R. Gray

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## 3.3 Proton and ion capture

**Lead authors:** W. Bertsche, M. Charlton

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## 3.3 Real-time dose-deposition profiling

**Lead authors:** J. Bamber, J. Matheson

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## 3.4 Novel, automated end-station development

**Lead authors:** R. McLauchlan, T. Price

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## 3.5 Facility design and integration

**Lead authors:** J. Pasternak, N. Bliss

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# 4. Summary

**Lead authors:** A. Giacca, K. Long

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# Annex: LhARA preliminary, pre-construction phase project specification

## A.1 Introduction

**Lead authors:** K. Long, C. Whyte

Indicative page count: 0.5

## A.2 Work package details

**Lead authors:** Work-packages managers, one section per work package.

Indicative page count: 2.5 pages per work package

## A.3 Staff effort

**Lead authors:** K. Long, C. Whyte

## A.4 Overview of preliminary, pre-construction phase project costs

**Lead authors:** K. Long, C. Whyte

## A.5 Preliminary, pre-construction phase project schedule and milestones

**Lead authors:** K. Long, C. Whyte: digested from WP schedules.

## A.6 Preliminary, pre-construction phase project risk analysis

**Lead authors:** K. Long, C. Whyte: digested from WP risks

## A.7 Stakeholder, outreach, and engagement plans

**Lead authors:** J. Parsons, P. Price

Indicative page count: 2

## A.8 Project organisation, management, and reporting

**Lead authors:** K. Long, C. Whyte