Internal ID: *Filled-in by the Research Office* Date: *Click here to enter a date.*

Project title:

*Project title*

Main applicant(s):

*First and last name and main institute of employment between parentheses (…)*

Co-applicant(s):

*First and last name and main institute of employment between parentheses (...)*

HollandPTC employee(s) contacted about the project (if applicable):

*First and last name(s)*

Fit within the HollandPTC R&D programme:

|  |  |  |
| --- | --- | --- |
| Please indicate to which roadmap(s) your project belongs  (an explanation of the roadmaps can be found on the HollandPTC-website) | 1. Technology for the next generation of proton therapy |  |
| 1. Imaging for biology-guided adaptive proton therapy |  |
| 1. Evaluation and implementation of new technology |  |
| 1. Radiobiology |  |
| 1. Predictive modelling, big data analytics, decision making, economics |  |
| 1. Clinical trials |  |
| Please indicate to which research domain(s) your project belongs | Clinical Research |  |
| Physics and Technology |  |
| Biology |  |

To which funding agency (and the call) are you planning to submit this proposal?

*Funding agency and expected date of submission*

In case the project is already funded, please describe the funding.

*Funding agency and call*

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| *Summary of the research (including; introduction/problem description, aim of the project, methods and materials/plan of investigation, expected outcome).* |

Scientific summary:

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| Expected start of the project: *Expected start of the project*  *Describe the estimated time schedule of the research, specifically the expected date of the requested resources at HollandPTC and expected duration of the study/experiment.* |

Time schedule:

Please fill in the section(s) below that is applicable to your research project: the clinical study section and/or the medical physics and radiobiology section.

Clinical study

|  |  |
| --- | --- |
| Describe the study population | *Patient population and study sample (eligibility criteria, sample size)* |
| What clinical data do you want to use and/or collect, and indicate at which time points? | *Data and time points* |
| In the case of an interventional study, describe the intervention | *Intervention (including additional medication needed), estimation of the burden to the patients and time points* |
| Does the project involve experiments using (additional) radiation? | *Describe the part of the experiment where radiation is used and what radiation facility will be used (excluding the radiation used during standard clinical treatment).*  *Examples of HollandPTC radiation facilities:*   * *Cyclotron (R&D bunker or patient gantries (standard or eye line))* * *Imaging modalities (CT imaging or PET-tracers)* |

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| With this study I would like to use the following facilities of HollandPTC: *(\*choose from the available options)* *This does not include interventions that are already included in the standard clinical care* | |
| CT | Number of scans: *……………..*  Expected duration of scan: *……………..* min  Performed with dual-energy CT scanner  with contrast: *……………..*  Persons will be scanned with radiotherapy masks  with phantom: *……………..*  with additional hardware in room (e.g. physiological monitoring):  *……………..* |
| MRI | Number of scans: *……………..*  Expected duration of scan: *……………..* min  with software patch: *……………..*  with contrast: *……………..*  with one or more coil(s): *……………..*  Persons will be scanned with radiotherapy masks  with phantom: *……………..*  With additional hardware in room (e.g. physiological monitoring):  *……………..* |
| PET/CT | Number of scans: *……………..*  Expected duration of scan: *……………..* min  with tracer: *……………..*  with other medication: *……………..*  with diagnostic CT  with CT contrast: *……………..*  Persons will be scanned with radiotherapy masks  with phantom: *……………..*  with additional hardware (e.g. physiological monitoring):  *……………..* |
| Treatment planning (using Raystation) | Number of plans: *……………..*  for *proton/photon\** plans  with patient data from *medical center*  with imaging made during treatment at HollandPTC  access to clinical scripts  use own scripts |

|  |  |
| --- | --- |
| Treatment | Expected duration per patient: *……………..* min  with use of imaging*: kV / CBCT / CT on rails*  with other additional hardware that is already present in the gantry:  *……………..*  with additional hardware that is not already present in the gantry:  *……………..* |
| CE-marking | use device(s) without CE-marking:  *……………..*  use device(s) with CE-marking, but with off-label use:  *……………..* |
| IT facilities | *Describe the requested IT support* |

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| During the study I would like the following support of HollandPTC personnel: *This does not include interventions that are already included in the standard clinical care (\*choose from the available options)* | |
| Patient inclusion | Patient inclusion *support/performed completely by HollandPTC\** |
| Radiotherapy masks | Construction of the radiotherapy masks |
| Imaging | *Developing/Optimizing\** scan protocols  Performing one of more phantom scans  Performing the *CT/MRI/PET-CT\** imaging |
| Treatment planning | Making treatment plans  Delineating *OAR/tumour\** |
| Treatment | *Developing/Optimizing\** treatment protocol  Performing study specific treatment  Performing study specific interventions in the gantries (not including study specific treatments) |
| Other support | *Support* |

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| *[Optional] Provide extra information on what is needed from HollandPTC for this study* |

Med Phys and Radiobiology study

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| Does the project involve experiments using the proton beam? | *Describe the part of the experiment where the proton beam is used (R&D bunker or patient gantries, beam energy, beam intensity, single pencil beam, large field, etc)* | |
| What target will be irradiated? | *Specify the target (specifically, if targets are inflammable, corrosive, etc.) and specify if special handling is needed.* | |
| Does the project involve experiments using radiation for imaging? | *Describe the part of the experiment where radiation is used and what imaging facility will be used* | |
| Does the project involve animal studies? | *Describe what kind of animals, the number of animals, the description of the interventions and the time points* | |
| Does the project involve experiments using human blood and (tumour) tissue? | *Describe the samples (GMO), the number of samples, the interventions and the time points* | |
| Does the study also require patient intervention(s) at HollandPTC to acquire the blood/tissue samples?  *(if Yes, also fill in the clinical study section of this checklist)* | *Yes / No* |

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| With this study I would like to use the following facilities of HollandPTC: *(\*choose from the available options)* | |
| Imaging | |
| CT | Number of scans: *……………..*  Expected duration of scan: *……………..* min  Performed on the *diagnostic/gantry\** CT scanner  with phantom: *……………..* |
| MRI | Number of scans: *……………..*  Expected duration of scan: *……………..* min  with software patch: *……………..*  With additional hardware in the room: *……………..*  with one or more coil(s): *……………..*  with phantom: *……………..* |
| PET-CT | Number of scans: *……………..*  Expected duration of scan: *……………..* min  with tracer: *……………..*  with phantom: *……………..* |
| Treatment planning system & patient gantries | |
| Raystation | Expected hours of use: *……………..* hour  for *proton/photon\** plans  with imaging made at HollandPTC  access to clinical scripts  use own scripts |
| Patient gantries | Expected preparation time: *……………..* hour  Expected beam time: *……………..* hour  The experiments are performed in the *standard/eye line\** gantries  List the additional material/hardware (incl. target) that you will bring in the gantry:  *….…* |
| R&D bunker | |
| R&D bunker | Beam time request: *………* hour  Expected period of experiment: *…(e.g. June 2019)……*  Estimation of preparation time in R&D bunker: *………* hour  Specify if specific equipment from HollandPTC is needed (e.g. computers, DAQ, target support, detectors, etc):  *…………..* |
| Laboratories | |
| Biology | Expected time prior to experiment: *……………..* hours  Expected time during experiment: *……………..* hours  Expected time after experiment: *……………..* hours  Are you bringing additional devices? *Yes / No\** |
| Chemistry | Expected time prior to experiment: *……………..* hours  Expected time during experiment: *……………..* hours  Expected time after experiment: *……………..* hours  Are you bringing additional devices? *Yes / No\** |
| Physics | Expected time prior to experiment: *……………..* hours  with own hardware: *……………..*  with hardware present in HollandPTC:  *…(list hardware)…* |
| IT facilities | *Describe the requested IT support* |

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| During the study I would like the following support of HollandPTC personnel:  *(\*choose from the available options)* | |
| Imaging | *Developing/Optimizing\** scan protocols |
| Patient gantries | *Developing/Optimizing\** experiment protocols |
| R&D bunker | *Developing/Optimizing\** experiment protocols |
| Other support | *Support* |

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| *[Optional] Provide extra information on what is needed from HollandPTC for this study* |