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

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| --- | --- |
| 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 |

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| 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\** gantriesList 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: *………* hourSpecify 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: *……………..* hoursExpected time after experiment: *……………..* hoursAre you bringing additional devices? *Yes / No\** |
| Chemistry | Expected time prior to experiment: *……………..* hours Expected time during experiment: *……………..* hoursExpected time after experiment: *……………..* hoursAre 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* |