

# High Tech for a Sustainable Future

## Call for full proposals 2021

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November 2021

**4TU**.Federation

# 1. Introduction

## 1.1. Context

The 4TU.Federation, made up of the four Universities of Technology of the Netherlands, is committed to strengthening and pooling technological knowledge in the Netherlands. The first edition of the High Tech for a Sustainable Future (HTSF) programme was shaped around these ambitions and will end at the end of 2022. The 4TU.Federation now aims to award a new set of theme-based capacity building programmes through the next call: High Tech for a Sustainable Future - call 2021. This Call for Proposals follows the Call for Expressions of Interest published in August 2021 and is relevant for those main-applicants that have submitted an Expression of Interest or for those co-applicants that have connected with a main-applicant of an Expression of Interest.

## 1.2. Goal

The goal of the High Tech for a Sustainable Future 2021 call is to stimulate **structural and sustainable collaborative theme-oriented** research **between the 4TU's** on topics that require 4TU collaboration and for which it is more difficult to acquire funding externally yet (i.e. new or high risk topics). The **societal relevant** programmes **attract & develop new and diverse talent** for the 4TU's and aim to **deliver societal impact through scientific breakthroughs**. After a funded start-up period of five years, research should **continue without 4TU.Federation funding**. The programmes strive to increase **visibility and impact of the 4TU Federation in society**.

## 1.3. Characteristics of the programme

The complete detailed information can be found in the next sections of this document. Here we briefly introduce the most important characteristics.

- Programme duration: 5 years, after which programmes are expected to become financially independent
- Room to finance 3-5 programmes
- All four TU's are involved (with commitment from the involved faculties<sup>1</sup>) in each programme and each university will host each at least 1 Tenure-Track position
- All Tenure-Track positions are funded for three years and have commitment from the involved faculties to maintain the Tenure-Track position.
  - Co-funding by the faculties is integrated in the program by the salary costs of the Tenure-Trackers starting in the fourth year of employment.
  - All Tenure-Track positions are supported via the HTSF 2021 program with a starting package, worth 1 PhD-position (yearly contribution for a 4 year duration).
- Main applicant of the EoI and the full proposal is a senior scientist with a permanent position at one of the four TU's capable and willing to lead the programme.
  - The full proposal should be based on at least one EoI
  - The main applicant of the full proposal will be the programme leader.
- Themes for which a full proposal can be submitted have been selected by the deans of the four TU's based on the submitted Expressions of Interest.
- Topics awarded in the previous HTSF programme are excluded.
- External funding is possible, but not necessary.

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<sup>1</sup> Wherever 'faculties' or 'deans' is mentioned, 'science groups' and 'general directors' are considered for WUR.

## 1.4. Research Themes

Proposals can be submitted on themes that have been selected by the deans based on the Expressions of Interest. The following themes have been selected:

### 1) **Materials and high-tech sensing technologies for the ageing built environment**

The built environment is full of ageing (physical) infrastructure that provides a range of services enabling our daily life (e.g. energy, shelter, mobility, data, ecology, water, etc.). Besides the decay by ageing, current societal challenges force our (physical) infrastructure to be renewed and innovated sustainably. Solving this requires an ecosystem approach that takes into account multiple transitions like the energy transition, housing, repurposing areas, climate adaptation, digitalisation and shifts in the modes of transport. *This theme is centred around the question: How can we repurpose, renovate and improve infrastructure in the ageing built environment in a sustainable way with (circular) materials and high-tech sensing technologies?*

### 2) **Low-cost sensing technologies for health**

The corona pandemic has illustrated the importance of low-cost and easily accessible sensing technologies to support healthy living and allow easy monitoring of diseases. Moreover, new insights have been gained on social processes for adopting health technology. However, health care systems remain burdened by an ageing population, unhealthy behaviour and harming (social) environments. Digitizing and monitoring our health status and/or behaviour for prevention, during chronic illness, or in recovery offers opportunities to relieve the health system. While many sophisticated sensor and monitoring technologies focus on delivering high sensitivity and precision, ease of use, accessibility and affordability are ultimately determining the adoption of new sensor technologies in health care. Moreover, new data processing technologies and system analysis provide new possibilities to obtain useful information based on low-cost and easy-to-use sensors.

*This theme is centred around the question: Which low-cost high-tech solutions can help to sustain our health care systems responsibly and be adopted in society?*

### 3) **Sociotechnical approaches towards data-driven sustainable food systems**

Food production, processing, supply and consumption (food systems) play an important role in numerous societal challenges. In order to solve these challenges, our food systems need to transform. Thereby it is important to take cultural contexts and human behaviour into account. Digital and physical technologies can offer data-driven management and decision support for private, common and public actors. These technologies support for instance logistics, strategic investments or residue management towards a circular and more robust economy.

*This theme is centred around the question: Taking into account cultural contexts and human behaviour, how can we accelerate data-driven sustainable food systems?*

On the application form, applicants will be asked to argue why their proposal aligns with one or more of the themes.

## 2. Guidelines for applicants

### 2.1. Who can apply?

#### 2.1.1. Main & co-applicants

All senior 4TU scientists with a fixed contract could act as main applicant for the Expression of Interest and can act as main applicant for the full proposal. A full proposal should be based on at least one Expression of Interest. The main applicant is intended to become programme leader in case the programme is awarded. At least three co-applicants should be involved in the proposal, i.e. at least one applicant from each university is involved. Applicants can only be part of one proposal, as a main or co-applicant.

#### 2.1.2. Consortium

At the full proposal stage the consortium should consist of all four universities and make abundantly clear in the proposal why 4TU collaboration is necessary for the execution of this programme. All full proposals have to have written commitment by the deans of the involved faculties (template commitment letter is available). Collaboration with external parties (e.g. other universities, TO2 institutes, societal partners, industrial/social partners etc.) within the consortium is possible, but not necessary.

### 2.2. What can you apply for?

Within HTSF 2021 you can apply for 5 year funding of a programme with the intention to become financially independent after these 5 years. The funding can be used for personnel and materials. The total 4TU budget for HTSF 2021 is €15M. It is the intention to fund three to five programs of €3-5M each. The application requires the applicants to submit a well-argued budget<sup>2</sup>.

#### 2.2.1. Personnel:

The HTSF-programme aims at attracting and developing new and diverse talent for the 4TU and therefore focuses on creating new Tenure-Track positions. Consortia can apply for a fixed (mandatory) base with variable additions:

- *Mandatory* - At least four new Tenure-Track positions (k€ 108/year for the period of 3 years), each supported by a starter pack (k€ 72/year for a period of 4 years which can be used to fund a PhD student, or other costs)
  - Although the scale of programmes may vary, each programme must be of sufficient scale to achieve academic excellence and build momentum for innovations and applications.
  - At least one Tenure-Track position at each University.
  - Tenure-Track positions are funded for three years. The faculties offering the position should guarantee that they pay the position of the Tenure Track after the first three years and that Tenure Trackers who qualify for tenure will be offered a permanent position.
  - Existing Tenure-Track positions will not be funded.
- *Optional* – Scientific support staff
  - E.g. lab manager, data steward
- *Optional* – PostDoc (k€ 95/year)
- *Mandatory* – 5% of total requested 4TU budget should be spent on coordinating and communication staff.

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<sup>2</sup> Depending on the granted programmes and requested budgets the total programme budget will be determined in accordance with the 4TU.Federation.

PDEng trainees (probably named EngD trainees in future) can be involved in the programme, but do not receive 4TU funding.

The research team should be as diverse as possible. The HTSF-programme expects a minimum of 50% of all Tenure-Track scientists to be female. The consortia are expected to develop a diversity plan for the programme, which is part of the selection process.

### **2.2.2. Material**

Consortia can apply for a maximum of 20% of the total requested 4TU budget to use on the following:

- Equipment
- Consumables
- Open Access fees
- Travel costs

### **2.3. Co-funding**

Co-funding by the faculty is integrated in the programme by the salary cost of the Tenure-Trackers. This co-funding starts in year 4 of the programme.

Additional in-cash or in-kind co-funding (by consortium partners) is allowed up to a maximum of 49% of the requested 4TU budget.

## **3. Criteria**

Full proposals will be evaluated based on three main criteria. All main criteria are equally important.

- 1. Suitability of the topic**
  - The added benefit of 4TU collaboration for this topic is convincing
  - The topic is exciting, original, innovative and/or high risk
  - The topic is relevant to society
  - The topic fits the selected theme and does not overlap with existing HTSF programmes
- 2. Quality of the proposed programme**
  - The programme is of high scientific quality
  - The proposal describes the path to scientific and/or societal breakthroughs clearly and convincingly
  - The programme has a convincing outreach plan for visibility inside and outside 4TU
  - The programme budget is well argued and appropriate
- 3. Alignment between the programme and the consortium**
  - The main applicant is well suited for the role of programme leader
  - The proposed team and consortium are of appropriate size and composition for the programme
  - The envisioned support organisation is suitable to the programme
  - The long-term continuity (sustainable collaboration) of the programme independent of 4TU funding is convincing
  - The recruitment, development and diversity plan are convincing

## 4. Procedure

The application process has the following steps:

- Call for Expression of Interest – August 2021
- Deadline Expression of Interest – Deadline: October 6<sup>th</sup> 2021, 14.00 hrs
- Selection of themes by deans – 3 November 2021
- Call for full proposals available – 10 November 2021
- Deadline for registration matchmaking event – November 26<sup>th</sup> 2021, 14.00 hrs
- Matchmaking Event – December 3<sup>rd</sup> 2021, Design Lab, University of Twente
- **Full proposal submission – Deadline: March 11<sup>th</sup> 2022, 14.00 hrs**
- Evaluation of proposals – March-May 2022
- Granting proposals – May 2022
- Publish Tenure Track vacancies – June 2022
- Start programme – January 2023

### 4.1. Matchmaking Event

4TU will organize a matchmaking event on December 3<sup>rd</sup> 2021 (University of Twente, Design Lab<sup>3</sup>). The matchmaking can be attended by main and co-applicants of the Eol's that fit within the selected themes (section 1.4), as well as by participants invited by the dean of their faculty, based on the participants' connection to a theme. Registration is mandatory for all participants. The registration deadline for the matchmaking event is November 26<sup>th</sup> 14:00. Please register [here](#). If the topic of your Expression of Interest does not fit any of the selected themes, we suggest that you withdraw from the application process.

The aim of the event is to bring together (future) partners that can together develop full proposals for this call. Moreover, we hope that this event will facilitate the combination of ideas from different Eols into a limited number of full proposals to prevent ungranted work<sup>4</sup>.

### 4.2. Proposal submission & eligibility assessment

Applications can be submitted by the main-applicant (envisioned programme leader) using the application form. Applications should be written in English and should follow the guidelines given on the application form. The application form must be accompanied by:

- The budget table (XLS template provided)
- Commitment letters from the deans of all faculties involved (template provided)
- If applicable, commitment letters from each co-funding external partner (template provided).

The application form and necessary attachments should be sent as separate pdf- and excel-files in an e-mail to [secretaris@4TU.nl](mailto:secretaris@4TU.nl). The closing date for submission of proposals is **March 11<sup>th</sup> 2022 14:00**.

Applications submitted after the deadline or not following the guidelines of the application form will not be taken into consideration. 4TU may decide to give consortia the opportunity to adapt the proposal to become eligible on short notice. Proposals that are not declared eligible will not proceed in the assessment procedure. Eligibility will be assessed using the following guidelines:

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<sup>3</sup> Pending Covid regulations

<sup>4</sup> We aim to receive 6-10 full proposals, leading to chances of funding of about 50%.

- The proposal is based on at least one Expression of Interest
- All 4TU's are involved creating at least one Tenure Track position per university
- The main applicant is a senior scientist of 4TU
- Applicants are only part of one proposal
- The topic fits the selected theme and does not overlap with existing HTSF programmes
- Co-funding is <49% of the requested 4TU budget
- 5% of the requested 4TU budget is reserved for project coordination/communication
- Budget for materials is max 20% of the total requested 4TU budget
- The prescribed rates are used for Tenure-Track, starting packages and PostDoc positions
- Commitment letters of all the relevant deans are submitted
- If applicable - commitment letters of all the involved external organisations are submitted
- The budget table (XLS) is submitted and correctly filled out
- The application form is complete

#### 4.3. Committee & Evaluation

The 4TU.General Board has mandated the 4TU.Research Committee to make the decision whether to grant a financial contribution to each of the proposed research programmes. The 4TU.Research Committee will be advised by an independent assessment committee.

The decision of the granted programmes will be taken during a 4TU.Research Committee meeting based on the advice of the assessment committee. Shortly afterwards, the corresponding scientists of the consortia will receive an email, informing them on the decision of the 4TU.Research committee.

#### 4.4. Communication & Starting the project

If the 4TU.Research Committee has decided to grant a financial contribution to the research programme, a meeting between the 4TU secretary and the programme leader is arranged. The aim is to come to an agreement about the details of the total programme budget, the financial contribution of the 4TU and the governance structure and annual reporting procedure of the programme.

The Tenure-Track vacancies of all programs will collectively be published externally by July 2022 via 4TU. The aim is to appoint the Tenure-Trackers by January 1<sup>st</sup> 2023 and the positions should be filled ultimately by July 1<sup>st</sup> 2023 (appointment at a later date will lead to an adjusted 4TU contribution).

## 5. Questions & Contact information

In order to answer any questions that you may have about the HTSF 2021 programme and the Call for Proposals we organize three online webinars / questions hours:

- Monday, 13 December 2021, 13-14 hrs. [Click here to join the meeting](#)
- Thursday, 20 January 2022, 16-17 hrs. [Click here to join the meeting](#)
- Tuesday, 1 March 2022, 9-10 hrs. [Click here to join the meeting](#)

Attending the webinars is not mandatory to submit a full proposal; they are just meant to answer questions you may have. Each webinar has the same set-up: short presentation about the HTSF 2021 programme and the Call for Proposals, followed by plenty of time for questions. You do not need to register for the webinars; you can just pick the date that suits you best and join the meeting via Microsoft Teams.

Contact point for the HTSF 2021 programme: [secretaris@4tu.nl](mailto:secretaris@4tu.nl)

## Appendices (Documents to be downloaded separately)

- Matchmaking registration form ([online](#))
- Application form ([word](#))
- Template commitment letter faculty ([word](#))
- Template commitment letter external organisation; optional ([word](#))
- Template budget table (**xls**; will follow as soon as possible)