



Over dit formulier

- Met dit formulier kunt u uw project of programma bij de Rijksdienst voor Ondernemend Nederland (RVO.nl) aanmelden om mee te dingen naar de benoeming tot Nationaal Icoon 2016.
- Lever formulier en bijlagen in bij RVO.nl (het adres staat hiernaast).
- Lever tijdig in! Het uiterste inlevertijdstip is maandag 13 juni 2016, 24:00 uur.
- Meer informatie vindt u op rvo.nl/nationaalicoon
- Het formulier kan worden opgeslagen op uw eigen systeem en worden gemaïld naar RVO als bijlage. Onvolledig ingevulde formulieren worden niet in behandeling genomen.

Aanmelding Nationaal Icoon

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Komt u in aanmerking?

- a. Bestaat het financiële belang binnen het project of programma voor tenminste twee derde uit Nederlandse bedrijven en/of kennisinstellingen? Ja
 Nee > *Op basis van deze informatie voldoet u niet aan de randvoorwaarden.*
- b. Wordt er samengewerkt met strategische partners zoals bedrijven, kennisinstellingen en/of overheden? Ja
 Nee > *Op basis van deze informatie voldoet u niet aan de randvoorwaarden.*

1 Gegevens aanvrager

- 1.1 Naam organisatie/programma | Dutch Techcentre for Life Sciences
- 1.2 KvK-nummer | [5 [9 [2 [0 [0 [1 [0 [3]]]]]]]]
- 1.3 Straat | Catharijnesingel
Huisnummer | Huisnummertoevoeging |
Huisnummer en toevoeging | [5 [4 [[[[]]]]] |
- 1.4 Postcode en plaats | [3 [5 [1 [1 [G [C]]]]]] | Utrecht
- 1.5 Land | Nederland
- 1.6 Is uw bezoekadres anders dan uw postadres? Ja
 Nee > *Ga verder met vraag 2.*
- 1.7 Postadres | Postbus
Huisnummer | Huisnummertoevoeging |
Huisnummer en toevoeging | [1 [9 [2 [4 [5]]]]] |
- 1.8 Postcode en plaats | [3 [5 [0 [1 [D [E]]]]]] | Utrecht
- 1.9 Land | Nederland

2 Contactpersoon bij de aanvrager

2.1	Contactpersoon	Titel(s) Prof. dr.	Voorletter(s) B.	Tussenvoegsel(s)
		Achternaam Mons		
		<input checked="" type="checkbox"/> Man <input type="checkbox"/> Vrouw		
2.2	Telefoon	0 8 5 3 0 3 0 7 1 1		
2.3	Mobiel	0 6 2 4 8 7 9 7 7 9		
2.4	E-mail	barend.mons@dtls.nl		
<i>Leeswijzer: Met een boegbeeld bedoelen we iemand, een persoon, die namens het project/bedrijf/consortium optreedt als vertegenwoordiger voor mogelijke publieke optredens.</i>				
2.5	Zal bovenstaande contactpersoon als boegbeeld van het project/programma optreden?	<input checked="" type="checkbox"/> Ja > Ga verder met vraag 3.		
		<input type="checkbox"/> Nee > Vul vraag 2.6 t/m 2.9 in.		
2.6	Naam organisatie			
		Straat of postbus		
2.7	Postadres			
		Huisnummer of postbusnummer	Huisnummertoevoeging	
		Postcode	Plaats	
2.8	Postcode en plaats			
2.9	Land			

3 Kerngegevens en betrokken partijen

3.1	Projectnaam	Global Open Implementation of the Internet of FAIR Data and Services.
	Projectnaam afkorting	'GO-FAIR'
<i>Maximaal 500 woorden.</i>		

Aanmelding

Nationaal Icoon

Rijksdienst voor Ondernemend Nederland

3.2 Samenvatting project/programma

'GO-FAIR' is a Dutch-coordinated international initiative supporting a revolutionary transformation of Open, data intensive science and innovation, with global societal impact. It is a scalable implementation environment to realise an Internet of FAIR data and services, where analytical tools can be combined with relevant data as both are Findable, Accessible, Interoperable and thus ultimately Re-usable (i.e. FAIR).

Between visionaries it is agreed that addressing humanity's grand challenges can only be successful if all information is connected globally. Domain experts increasingly depend on Big Data and specialized ICT to enable knowledge discovery and decision-making. The rapidly emerging trend is utilizing complex analytics combining multiple data sources and expertise areas. Global initiatives, be it regarding precision medicine and personalised health (e.g Health-RI in the Netherlands), precision agriculture, logistics and demographic development, or environmental stewardship are all enhanced by the global availability of FAIR data and services.

However, in reality all scientific domains face enormous methodological challenges. Data production explodes at an unprecedented rate, while data analytics capabilities are hampered by disconnected data and incompatible formats; the loss of data is staggering and so is the subsequent global capital loss.

Dutch research institutions and companies have been leading in solutions to these challenges enabling the transition to data-driven and technology-assisted open science & innovation. This transition phase is intensively addressed at EC and G7 level, especially in the context of the 2016 Dutch EC presidency and the European Open Science Cloud (EOSC). The applicant of GO-FAIR is currently the Chair of the High Level Expert Group of the EOSC and GO-FAIR implements its major technical and governance recommendations.

Data management and analytics challenges are very prominent in the Life Sciences. That is why GO-FAIR will start mainly in this sector, but other science disciplines will benefit from Open Implementation both within and across domains and through guided international collaboration in GO-FAIR. By providing the key components of the Internet of FAIR Data and Services 'backbone' through the GO-FAIR chain of Open Implementation Labs, this project will impact all sectors of global society as well as constitute a daunting economic potential.

One of the goals for GO-FAIR is to position The Netherlands as a leading scientific infrastructure, technology and services export country and innovation Hub for the EOSC and its USA sister initiative (The Commons). GO-FAIR will achieve this aim by establishing the first implementation for the Life Sciences in the context of DTL with its partners SURF, NLeSC and initially mainly the Life Sciences and Health community, but progressively also with other disciplines. Subsequently, GO-FAIR will establish a series of coordinated 'Open Implementation Labs' around the world. GO-FAIR Labs will provide innovation space where public and private partners can work on components of the Internet of Data and Services under internationally agreed 'Rules of Engagement as will be provided by the EOSC high level expert group.

A successful GO-FAIR as 'started in The Netherlands' will create powerful incentives for data producers to comply with FAIR principles, thus fundamentally changing scientific practice by 2020.

Maximaal 200 woorden.

3.3 Welke mijlpalen wilt u met uw project/programma binnen 5-10 jaar bereiken? Wat is daarvoor nodig?

By 2020:

- Reference NL-GO-FAIR Lab established in the area of personalised health, involving academia, hospitals, SURF, medtech and ICT companies, patient organisations.
- Solid investment from already interested private and public parties in GO-FAIR.
- GO-FAIR Labs -multi-discipline- established in 5 continents;
- Rules of Engagement (EOSC, Commons) are guiding throughout;
- GO-FAIR labs have contributed to reference implementations in EOSC and Commons enabling a global knowledge backbone;
- European Open Science Cloud and USA/NIH Commons embrace GO-FAIR labs.
- Academic institutions, SME's and larger industry and PPP's are actively using the GO-FAIR chain of Labs;
- Societal and business development programme involving all Dutch top sectors and their industrial branches to boost acceptance of this new area of technology;
- NL positioned in a prominent role for a international FAIR-exchange internet backbone;
- A strong and professionally developed sustainability and growth strategy in place.

By 2025:

- Globally scalable, high performance interoperable infrastructure enabling the Internet of FAIR data and services, widely used throughout academia, industry and society
- Both Data and all other Research Objects are treated as 'internet shipping containers' enabling both secure shipping of data to workflows and vice versa.
- GO-FAIR labs have collectively delivered all basic components to enable the Internet of Data and Services.

Maximaal 100 woorden.

3.4 Geef aan in hoeverre het project/programma al een substantiële omvang heeft?

DTL's 40 partner organisations are well-equipped for the implementation of GO-FAIR labs. Within ELIXIR, DTL partners co-develop Health-RI and co-lead the global FAIR data developments. The Dutch FAIR initiative is internationally embedded and recognized. The EOSC has adopted the FAIR principles, has decided to make FAIR data output mandatory for research projects. EOSC serves 1.7 million researchers and 70 million knowledge workers in European academia and industry alone. The extension of this project to the GO-FAIR global ambition will require the establishment of an ever growing number of well managed active public-private partnerships based upon the current Dutch approach.

Criterion Maatschappelijke opgaven
Maximaal 500 woorden.

- 3.5 Beschrijf op welke manier het project of programma op innovatieve wijze bijdraagt aan de oplossing voor een maatschappelijke uitdaging. <http://ec.europa.eu/programmes/horizon2020/en/h2020-section/societal-challenges>
- All H2020 challenges are ultimately associated with data. The data explosion that high-end technologies have generated is currently one of the major technological and social challenges in science and innovation. In response, the EC has appointed a High Level Expert Group (2015) to assess the development of a 'European Open Science Cloud, perceived as a set of 'cloud-based services and world-class data infrastructure to ensure science, business and public services reap benefits of the big data revolution'. The group, chaired by Prof. B. Mons (applicant) has come forward with a vision on EOSC as the 'Internet of FAIR data and Services'. The general GO-FAIR challenge is thus; how to capitalize on data in the first place, using only minimal protocols for data interoperability analogous to those of TCP/IP ensuring hypertext interoperability. Solving this will contribute to the effective approach to all downstream challenges.

In order to be practical and focused, the early phase of GO-FAIR will be driven by two urgent and complex use cases: one major health challenge in line with H2020 challenges and one major environmental challenge (in Brazil).

Personalised medicine & health

The health challenge is the crisis to effectively use data from the science & care systems by citizens, scientists and institutions for personalised health and precision medicine. To address this challenge DTL partners are involved in the Health Research Infrastructure initiative (Health-RI), which will assemble all relevant Dutch research and care resources connected in a linked-data backbone infrastructure, based on FAIR data. The solution, called the Personal Health Train, allows packaged workflows (trains) to visit personal medical data (stations) rather than that data moving to compute locations running the workflows.

Environment & health

On November 5th, 2015, an iron ore tailing dam in Bento Rodrigues, Brazil, suffered a catastrophic failure releasing approximately 60 million cubic meters of iron ore mining waste into the Doce river. The toxic mud reached the Atlantic Ocean 17 days later. The devastating impact and environmental consequences to the river and the beaches near its mouth to society and wildlife are still unclear. This incident has been described as the worst environmental disaster in Brazil's history.

The Brazilian Federal government has started an initiative to gather data. However, so far, data and interpretations are conflicting and frustrating the urgent need to assess and attack this critical situation. The Brazilian NEMO Group is forming a consortium to build an infrastructure for effective use of data resolving the current data interpretation challenges. The infrastructure will be used by the Brazilian government to continue the procedure for involvement and prevention of such disasters as well as for providing support for the victims. With the Brazilian partners, a GO-FAIR lab will be established where the collection and analysis of data concerning the impact and the potential solutions for this major environmental disaster will be both FAIR and transparent. This use case will demonstrate the power of combining FAIR data from chemistry, (marine) biology, environmental, social and biological sciences.

Criterion Technologische kwaliteit en mate van innovatie
Maximaal 300 woorden.

- 3.6 Geef aan waarom uw project uniek en innovatief is. Onderbouw waarom uw project wetenschappelijk/ technologisch grenzen verlegt en voorop loopt in de wereld. Beschrijf welke problemen er zijn die door uw project worden opgelost. Welke kennis en expertise, of bundeling daarvan, is uniek voor uw projectconsortium? Hoe verhoudt zich dat tot soortgelijke initiatieven elders in de wereld?
- The 'Internet of Data and Services' is a revolutionary technological step forward in its own right. It will rely on the latest e-infrastructure (i.e SURFnet8), whilst unfolding the first software-directed internet routing of workflow and data containers. As a default, most big data will remain in situ and 'the analytics will visit the data', keeping the infrastructure much more manageable.
- The major contribution to science will be the reduction of embarrassing losses of research data (currently in the order of 80% causing hundreds of billions of losses per annum) while simultaneously increasing data availability for re-use by machines and people.
- This will enable unprecedented 'social machine' possibilities from life sciences and health, all the way to humanities. Private companies can both access FAIR data as well as contribute to the pool of public FAIR data, allowing them to capitalize on their internal proprietary data as they exploit public (and now compatible) FAIR data and services.
- The possibilities for specialised third- party applications based upon FAIR data in the Internet are almost endless, as they appear to be in the internet of hypertext. The unique combination of ontological, data technology and infrastructure skills in the broad Dutch DTL/SURF/NLeSC/Health-RI consortium is unique and supported from around the world. The immediate aim to establish emerging GO-FAIR Labs in other countries is another unique aspect of this approach as well as its deep embedding in the EOSC.
- According to one of the prominent supporters of this initiative (George Strawn):
- 'The Netherlands is both small and big enough to pull this off'
- Last but not least, by facilitating data exchange between disciplines and experts, GO-FAIR Labs open up unprecedented cross-disciplinary approaches, cross-sector business development and training and career opportunities.
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Aanmelding **Nationaal Icoon**

Rijksdienst voor Ondernemend Nederland

Criterion Economisch perspectief/verdienvermogen
Maximaal 300 woorden.

- 3.7 Beschrijf de potentie van het project om bij te dragen aan het verdienvermogen van Nederland. Wat is het internationale marktpotentieel op de middellange en lange termijn? In hoeverre geeft het project/ programma kansen voor (nieuwe) Nederlandse bedrijvigheid en omzet? Zijn er kansen op grootschalige toepassing en/of spin-offs naar andere sectoren?
- The global economic potential of the project is substantial. Presuming timely and effective market penetration, BV Nederland can benefit at scale from the opportunities opening up. Investment in GO-FAIR labs is being discussed with numerous private parties in NL, Europe and the USA. Their potential investment will be much encouraged by the Icon status of this project.
1. International market potential
 - a. Reducing loss from data malpractice: approximately 50% of all research outcomes are not reproducible. Europe and the USA invest minimally €500B in data generating research annually so the capital destruction may amount to €250B. Additional losses are sustained by inefficient data analysis and corresponding delays in innovation and societal translation;
 - b. Establishing FAIR Data Service Providers: Mandatory Data Stewardship for research projects will drive a new market for FAIRification services. At an estimated 5% of all data generating projects the market potential is apprx. \$1,8 trillion annually (global research spending all disciplines @ 2,371% of Gross World Product @ \$78,28 trillion; source Wikipedia and EOCED);
 - c. New generation of service providers: once all research data are available in FAIR format to all public and private domain parties, endless new applications and services can be developed that were previously inconceivable. The revenue potential is likely to supersede the FAIR data services market mentioned under b.
 2. Economic potential and employment opportunities for The Netherlands
 - a. Since the FO-FAIR labs approach is content agnostic, global spin off into all economical sectors provides an immense opportunity for BV Nederland;
 - b. Dutch FAIR Data Service Providers will have an early shot at a significant share of revenue potential for FAIRification of EU research data of approximately €20B (5% of €400B spending in research);
 - c. Dutch-designed incubator packages 'for GO-FAIR labs' (export product) have the potential to be 'franchised' around the globe and derive substantial revenues from the addressable market;

Maximaal 100 woorden.

- 3.8 Beschrijf waarom het project inspirerend is voor ondernemers, burgers, potentiële afnemers en wetenschappers.
- The internet of FAIR Data and Services concept is sparking overwhelming interest from the scientific community, citizens and the private sector. There are ambitious related projects and large investments in major companies and leading universities. In its simplicity to attack a complex information problem, the incentive to join forces in GO-FAIR labs for these projects enjoys an unprecedented consensus. 'This is the joint way to GO-FAIR' apparently is perceived as an inspiring break-through approach in science infrastructure. Indeed, global, cross disciplinary interoperability of data and services in real time promises a paradigm shift accelerating science and innovation in all sectors.

4 Checklist bijlagen

- 4.1 Indien van toepassing; geef aan welke bijlagen u meestuurt (bijvoorbeeld afbeeldingen, impressies filmpjes).

All supporting material to this application is presented (and continuously updated) on the DTL website and can be accessed through the following link:

<http://www.dtls.nl/fair-data/national-icon-application-go-fair/>


5 Verklaring en ondertekening

- Ik ben bevoegd en/of gemachtigd om deze aanmelding te ondertekenen.
- Ik verklaar dat dit formulier naar waarheid is ingevuld.

5.1 Ondertekenaar

Titel(s)	Voorletter(s)	Tussenvoegsel(s)
Prof. dr.	B.	
Achternaam		
Mons		
	<input checked="" type="checkbox"/> Man	<input type="checkbox"/> Vrouw

5.2 Handtekening en datum

	Dag	Maand	Jaar
	1 3	0 6	2 0 1 6

6 Vervolg

U levert het formulier in

Stuur het ingevulde en ondertekende formulier tijdig naar RVO.nl. Het adres en de informatie over de uiterste inleverdatum vindt u bovenaan bladzijde 1 van dit formulier.

U ontvangt van ons een ontvangstbevestiging

Binnen 10 dagen stuurt RVO.nl u een ontvangstbevestiging. Daarin vindt u meer informatie over de verdere procedure.

Heeft u daarna nog vragen?

Neem dan contact op met RVO.nl. De contactgegevens staan vermeld in de ontvangstbevestiging.

We verwerken uw persoonsgegevens, omdat dit noodzakelijk is voor de uitvoering van deze competitie. Uw persoonsgegevens worden niet voor andere doeleinden gebruikt en worden niet langer bewaard dan noodzakelijk is. Voor meer informatie zie rijksoverheid.nl/privacy