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<b>Author(s):</b>	<b>Nastaran Matthes, Cristina Murillo, Cristina Urtiaga, Arne Skou, Geert Adriaens, Mark de Colvenaer</b>
<b>Participants(s):</b>	<b>Partners 1,2,3,4,5</b>
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**Abstract:**

This deliverable provides a list of possible funding sources for R&D projects in embedded systems designs and smart cities in the participating regions: Belgium, Denmark, Germany and Spain

**Keyword list:** R&D projects, Embedded Systems, Funding Sources, Funding Authorities, Smart City

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# 1 Summary

The deliverable 2.4 “Analysis and catalogue of funding sources” is a document delivered in the context of work package 2 “Regional RTD mapping and analysis”, activity 2.1.3: Catalogue funding / financing sources for the CLINES project. This document will be used in the development of funding strategy in work package 4.

The main goal of Activity 2.1.3 is to analyse the access to finance for R&D-projects in embedded systems design and smart cities in each RTD, in cooperation with regional and national funding authorities, private financial actors and companies.

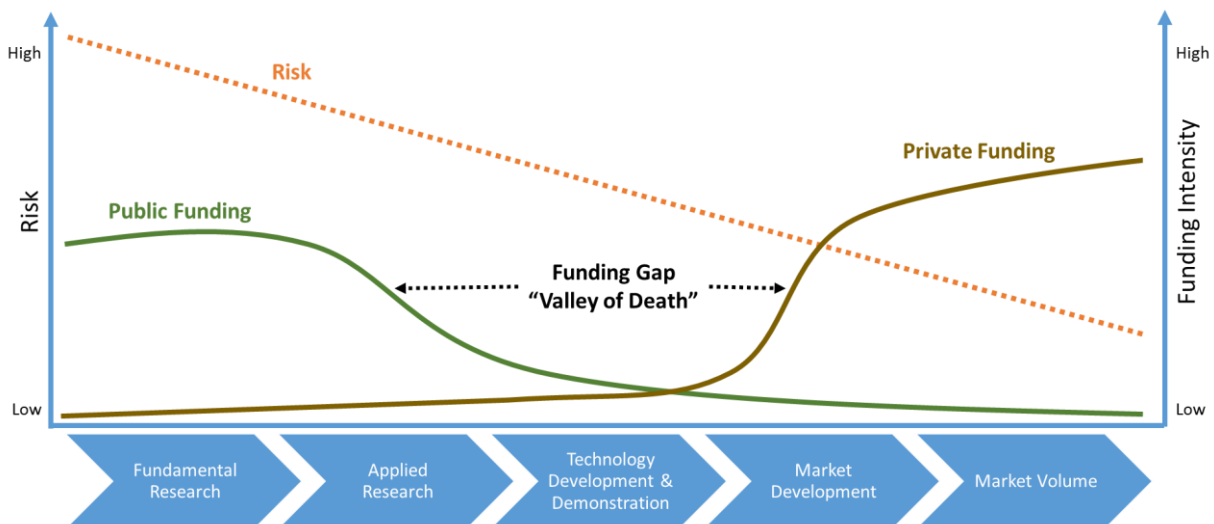
This document provides practical information on possible funding sources for each region in the following areas:

- Local and Regional Authorities (research funding, economic promotion)
- National Authorities
- European Programs / Funds
- Venture Capitalists / Business Angels
- Venture Capital Branches of big industry companies
- Banking industry

It contains information, as far as available, on the objectives and goals of each organization and their operational, financial aspects and contact details.

## 2 Introduction

For an idea to be developed to a point where it attains sustainability, there are a number of stages to be followed, from fundamental research to market volume. Each stage is characterized by a specific risk profile, from high risk in early research stages to low risk after reaching market sustainability. Risks can be classified in development risk and market risk.



This risk profile is key parameter for ‘funding organizations’ to take into account when deciding to fund a project. This leads to differences in funding intensity from stage to stage with different ‘funding organizations’ active in one stage and not in other stages. Generally spoken public funding organizations are active in the early stages, whereas private funding organizations are active in the later stages of innovation funding. In between, there is a financial gap, the so-called valley of death, the stage where innovative projects have difficulties to find the necessary financial resources to survive. The stage where public organisations are confronted with ‘state aid rules’ and private organisations still do not see a fair return on their money invested.

When searching funding for projects concerning **embedded systems design and smart cities** the above described framework offers a basic guide to distinguish between different funding sources based on the ‘maturity’ and risk profile of the project.

## 3 List of Funding Sources for the Bavarian Cluster of CLINES

This section contains a list of possible funding sources which have focus on areas related to embedded systems design and smart cities within the following categories:

- Local and Regional Authorities (research funding, economic promotion)
- National Authorities
- Venture Capitalists / Business Angels

- Venture Capital Branches of big industry companies
- Banking industry

The analysis and listing of the suitable funding sources in Bavarian Cluster has been carried out by the project partner TUM.

### 3.1 Local and Regional Authorities

Developing new technologies requires a great deal of financial expenditure, from conceptualization to successful market launch. That is why the State of Bavaria made a commitment early on to promote the development of new technologies in companies<sup>1</sup>.

Below, we provide a list of possible funding sources which have focus on areas related to embedded systems technology and smart cities:

Institution	Name of program	Program Content / Description	Contact / url
Bavarian Ministry of Economic Affairs and Media, Energy and Technology	BayINVENT	This funding will enable research, development and application of the renewable energy and the energy conservation technologies. Amount of overall investment: up to € 400,000 for each project Types of financing: Grants within the framework of the project funding Region focus: Bavaria	<a href="http://www.stmwi.bayern.de/service/oerderprogramme/energiefoerderung/">http://www.stmwi.bayern.de/service/oerderprogramme/energiefoerderung/</a>
Bavarian Government	FuE-Programm des Freistaats Bayern	This program applies of research projects that would be carried out in cooperation between companies and universities or in cooperation of several companies. Industries focus: Information and Communication Technology, additional funds for <u>Smart Grids</u> Types of financing: Grants within the framework of the project funding Region focus: Bavaria	<a href="http://www.iuk-bayern.de/">http://www.iuk-bayern.de/</a>
Bavarian Ministry of Economic Affairs and Media, Energy and Technology	BayTOU	BayTOU supports start-ups in promising areas of new technology. Industry focus: all Type and amount of financing: Grants within the framework of the project funding Max. grant for Software development € 150,000 Region focus: Bavaria	<a href="http://www.stmwi.bayern.de/service/oerderprogramme/technologiefoerderung/">http://www.stmwi.bayern.de/service/oerderprogramme/technologiefoerderung/</a>
Bavarian Ministry of Economic Affairs and Media, Energy and Technology	BayTP	BayTP supports the development of technologically new products and processes. Target/Beneficiary : SMEs Industries focus: all Type and amount of the financing: interest loans Region focus: Bavaria	<a href="http://www.stmwi.bayern.de/service/oerderprogramme/technologiefoerderung/">http://www.stmwi.bayern.de/service/oerderprogramme/technologiefoerderung/</a>

<sup>1</sup> Source: <http://www.stmwi.bayern.de/>

Bavarian Ministry of Economic Affairs and Media, Energy and Technology	BayEMA	<p>BayEMA supports research and development projects in areas electric mobility and innovative drive technologies for mobile applications.</p> <p>Target/Beneficiary: SMEs, University and research institutions, facilities of state universities in Bavaria</p> <p>Type and amount of financing: Grants within the framework of the project funding Region focus: Bavaria</p>	<a href="http://www.stmwi.bayern.de/">http://www.stmwi.bayern.de/</a>
Bavarian Ministry of Economic Affairs and Media, Energy and Technology	Medical Lead Projects	<p>This funding supports R&amp;D projects in the field of medical technology.</p> <p>Target/Beneficiary: SMEs, University and Research institutions, Facilities of state universities in Bavaria</p> <p>Type and amount of financing: Grants within the framework of the project funding Region focus: Bavaria</p>	<a href="http://www.stmwi.bayern.de/service/foerderung/technologiefoerderung/">http://www.stmwi.bayern.de/service/foerderung/technologiefoerderung/</a>
Bavarian Research Foundation		<p>The Research Foundation concentrates on forward-looking projects, the realization of which challenges science and commerce conjointly while assuring close and successful collaboration. The Foundation is able to provide approximately 20 million euros annually for this purpose.</p> <p>Focus: Life Sciences, Information and Communication, Microsystems Engineering, Materials Science, Energy and the Environment, Mechatronics, Nanotechnology, and process and production engineering</p> <p>Target/Beneficiary: Independent industrial companies, members of the professions, universities, non-university research institutes and universities of applied sciences, and members and establishments of Bavarian institutes of higher education who are authorised to carry out research and development programmes in Bavaria</p> <p>Type and amount of financing: Grants within the framework of the project funding Region focus: Headquarters in Bavaria or be represented by branches in Bavaria</p>	<a href="http://www.forschungstiftung.de/">http://www.forschungstiftung.de/</a>

### 3.2 National Authorities

Germany currently spends around 2.6 percent of its gross domestic product on research and development (R&D). Together with the federal states and business the Federal Government is

planning to increase spending on research and development to three percent of the gross domestic product by 2015<sup>2</sup>.

With regard to the energy and climate policy objectives of the Federal Government electro mobility and smart energy will continue to increase in importance in the future.

Below, you find a list of possible funding sources that have focus on areas related to embedded systems design and smart cities:

Institution	Name of Program	Program Content / Description	Contact / url
The Federal Ministry of Economics	ZIM	<p>Basic program of the Federal Ministry of Economics for innovative SMEs. The program supports research and development (R&amp;D) activities for innovative products and processes.</p> <p>Industry focus: all</p> <p>Types of financing: Grants within the framework of the project funding</p> <p>Regional focus: Germany</p>	<a href="http://www.zim-bmw.de/">http://www.zim-bmw.de/</a>
BMU, BMVBS, BMWi und des BMBF	Electric Mobility	<p>“Schaufenster Elektromobilität “ subsidies for electric mobility</p> <p>Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), the Federal Ministry of Economics and Technology (BMWi), the Federal Ministry of Transport, Building and Urban Development (BMVBS) and the Federal Ministry of Education and Research (BMBF)</p> <p>Beneficiary: Cooperative R&amp;D projects, enterprises, universities, research institutions</p> <p>Types of financing: Grants within the framework of the project funding</p> <p>Regional focus: Germany</p> <p>Limitation: up to 31.12.2016</p>	<a href="http://www.bmvi.de/SharedDocs/DE/Artikel/UI/foerderung-richtlinie-elektromobilitaet.html">http://www.bmvi.de/SharedDocs/DE/Artikel/UI/foerderung-richtlinie-elektromobilitaet.html</a> and <a href="http://www.bmbf.de/foerderungen/17324.php">http://www.bmbf.de/foerderungen/17324.php</a>

<sup>2</sup> Source: <http://www.tatsachen-ueber-deutschland.de/en/economy/main-content-06/innovations-for-the-markets-of-the-future.html>

The Federal Ministry of Transport, Building and Urban Development (BMVBS)	NIP	<p>National Innovation Program for Hydrogen and Fuel Cell Technology (NIP): This Program supports R&amp;D projects in Hydrogen and Fuel Cell Technology.</p> <p>Beneficiary: Enterprises, universities, research institutions</p> <p>Types of financing: Grants within the framework of the project funding</p> <p>Regional focus: Germany</p> <p>Limitation: up to 31.12.2016</p>	<a href="http://www.bmvi.de//SharedDocs/DE/Artikel/UI/nationales-innovationsprogramm-wasserstoff-und-brennstoffzellentechnologie-nip.html?linkToOverview=js">http://www.bmvi.de//SharedDocs/DE/Artikel/UI/nationales-innovationsprogramm-wasserstoff-und-brennstoffzellentechnologie-nip.html?linkToOverview=js</a>
The Federal Ministry of Economics and Technology (BMWi)	ICT for electric mobility II - Smart Car - Smart Grid - Smart Traffic	<p>Beneficiary: R&amp;D projects, private and public companies in the ICT industry, universities or research institutions based in Germany</p> <p>Focus: Development and testing of open and ICT based system solution in which electric mobility is optimally integrated into intelligent transport and energy networks.</p> <p>Type and amount of investment: Grants within the framework of the project funding.</p> <p>Region focus: Germany</p> <p>Limitation: Up to 31.12.2014</p>	<a href="http://www.ikt-em.de/de/Foerderung.php">http://www.ikt-em.de/de/Foerderung.php</a>
BMBF, BMWi, BMU und BMVBS	Hightech Strategy 2020	<p>Departmental integrated Framework program supports cooperative risky, precompetitive research projects. The program targets application-oriented industrial projects that require a division of labour and interdisciplinary cooperation between companies with universities or research institutions.</p> <p>Industry focus: Mobility, Communication, Security, Climate Energy, Health Food</p> <p>Type of investment: Grants, up to 50 % of the eligible project-related costs.</p> <p>Region focus: Germany</p>	<a href="http://www.bmbf.de/de/14397.php">http://www.bmbf.de/de/14397.php</a>
The Federal Ministry of Education and Research (BMBF)	SME Innovative	<p>The BMBF opens its specialized programs of research funding especially for projects of top research in SMEs</p> <p>Industrial focus: Biotechnology, Medical Tech, ICT, Nanotechnology, Technologies for Resource and Energy Efficiency</p> <p>Type and amount of investment: Grants within the framework of the project funding.</p> <p>Region focus: Germany</p>	<a href="http://www.bmbf.de/de/20635.php">http://www.bmbf.de/de/20635.php</a>



The Federal Ministry of Education and Research (BMBF)	Basic energy research 2020+	<p>The BMBF considers the concurrence of external research groups and the large-scale facilities in national and international centres as an important area for funding and thus supports this cooperation financially in the framework of "Verbundforschung" (collaborative research) in Germany.</p> <p>Beneficiary: R&amp;D projects, private and public companies in the ICT industry, universities or research institutions based in Germany</p> <p>Focus: Renewable Energy, Nanotechnology, next-generation Solar Energy Technology, development of lithium-ion batteries for electrical energy storage, etc.</p> <p>Type of investment: Grants within the framework of the project funding.</p>	<a href="http://www.bmbf.de/de/19870.php?highlight=Grundlagenforschung+Energie+2020">http://www.bmbf.de/de/19870.php?highlight=Grundlagenforschung+Energie+2020</a>
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### 3.3 Venture Capitalists / Business Angels

It is estimated that there are around 110 active venture capital firms in Germany. Over half of the VC provider acts independently. Numerous companies are among the development agencies of the federal and state.

Below, you find a list of possible Venture Capitalists that have focus on areas related to embedded systems design and smart cities:

Institution	Name of the program	Program Content / Description	Contact / url
High-Tech Gründerfonds		<p>High-Tech Gründerfonds invests in technology-based start-up companies with significant growth potential.</p> <p>Industries focus: Automation and Electronics, Cleantech, Enabling Technologies, Information and communication Technology, Life Science, Nanotechnology, Consumer Goods</p> <p>Investment: up to € 500,000, Follow on financing: € 1,5 Mio</p> <p>Types of financing: Credit (10%) and share of company</p> <p>Region focus: Germany</p> <p>Distinctive feature: Coaching Program</p>	<a href="http://www.hightech-gruenderfonds.de/">http://www.hightech-gruenderfonds.de/</a>
Bayern Kapital	Seedfonds Bayern	<p>Financing of technology companies (max. age 12 month) during the seed-phase</p> <p>Investment focus: Software &amp; IT, Medical Technology Sector, New Materials etc.</p> <p>Amount of overall investment: € 250,000 or € 500,000 in combination with High-Tech Gründerfonds</p> <p>Types of financing: Silent partnership, Equity</p>	<a href="http://www.bayernkapital.de/bayernkapital">http://www.bayernkapital.de/bayernkapital</a>

		<p>shares, Shareholder's loan</p> <p>Region focus: Headquarters in Bavaria</p> <p>Distinctive feature: only for small and medium-sized company, Normally in combination with the High-Tech Gründerfonds</p>	
Bayern Kapital	Clusterfonds Start-UP	<p>Financing of young technology companies (age 12 to 24 months), bridge from seed phase to start-up phase</p> <p>Investment focus: Software &amp; IT, Medical technology sector, New materials etc.</p> <p>Amount of overall investment: Max. € 500,000</p> <p>Types of financing: 10% shares of the company shareholders loan, Equity+agio, Silent partnership</p> <p>Region focus: Headquarters in Bavaria</p> <p>Distinctive feature: only for micro and small-sized company, normally in combination with the High-Tech Gründerfonds</p>	<a href="http://www.bayernkapital.de/bayernkapital">http://www.bayernkapital.de/bayernkapital</a>
Bayern Kapital	Clusterfonds Innovation	<p>Parallel financing of the capital investment and working capital for innovation projects of young, technology-oriented companies; especially during the research and development, constitution and expansion phases</p> <p>Investment focus: Life science, Micro-System Technology, Communication Technology, Software.</p> <p>Types of financing: Silent partnership or equity share</p> <p>Region focus: Headquarters in Bavaria</p> <p>Distinctive feature: only for micro and small-sized company, lead investor necessary</p>	<a href="http://www.bayernkapital.de/bayernkapital">http://www.bayernkapital.de/bayernkapital</a>
BayBG	Start Up	<p>BayBG provides start-ups and young companies (&lt;5) tailor-made participation model.</p> <p>Investment focus: all industries</p> <p>Amount of overall investment: € 20,000 up to € 250,000</p> <p>Types of financing: Silent partnership</p> <p>Region focus: Bavaria</p> <p>Distinctive feature: Coaching and business plan</p>	<a href="http://www.baybg.de/">http://www.baybg.de/</a>
BKV		<p>BVK (Bundesverband Deutscher Kapitalbeteiligungsgesellschaften e.V.) is the association of private equity and venture capital companies operating in Germany and is based in Berlin.</p> <p>Investment focus: Nanotechnology, Energy, Cleantech, Software/IT, Internet, ICT, Media Biotechnology, Healthcare, E-Commerce</p> <p>Region focus: Germany</p> <p>Investment: € 0,3 -6 Mio</p>	<a href="http://www.bvkap.de/privateequity.php/cat/25/mgdl/60/Name/LBBW_Venture_Capital_GmbH">http://www.bvkap.de/privateequity.php/cat/25/mgdl/60/Name/LBBW_Venture_Capital_GmbH</a>

Capital Entrepreneurial Partners AG		eCAPITAL entrepreneurial partners AG is a venture capital company which supports innovative entrepreneurs in forward-looking industries. Industries focus: Cleantech, Digital World, Automation and Good Life Private equity	<a href="http://www.ecapital.de">http://www.ecapital.de</a>
Early bird		Focus: Technology, Medical Technology, Embedded Software Investment: € 250,000 up to €10 Mio Example investment: Ubitricity (energy provider for electric mobility)	<a href="http://www.earlybird.com/">http://www.earlybird.com/</a>
European Founders Fund		European founders fund is focused on early- and later-stage investments in technology companies especially with an internet, software or wireless focus. Example investments: Facebook, HomeAway	<a href="http://www.europeanfounders.com/">http://www.europeanfounders.com/</a>
Wellington Partners Venture Capital		Wellington Partners is one of the most successful pan-European venture capital firms and a market leader in Germany. Investment focus: Life Sciences, Technology, Software, Digital Media	<a href="http://www.wellington-partners.com/wp/index.html">http://www.wellington-partners.com/wp/index.html</a>
Kizoo Technology Ventures		KIZOO provides seed and early stage financing with a focus on SaaS, Internet & Mobile Services and Social Applications.	<a href="http://www.kizoo.com/en/">http://www.kizoo.com/en/</a>
Point Nine		Point Nine Capital is an early-stage venture capital firm based in Berlin. Investment focus: Mobile, SaaS, eCommerce Amount of investment: between € 100,000 and € 500,000 per start-up when they get into a new company and up to around € 1.5million in later rounds. Region focus: World wide	<a href="http://www.pointninecap.com/">http://www.pointninecap.com/</a>

### 3.4 Venture Capital Branches of big industry companies

Institution	Name of program	Program Content / Description	Contact / url
Bilfinger Venture Capital		Bilfinger Venture Capital invests in young and technology oriented businesses which are related to the strategic and operational interests of Bilfinger. Investment focus: Smart Buildings, Smart Living, new forms of Mobility, Supply and Disposal, Renewable Energies, Enabling Technologies: Storage, Smart Power, Energy Efficiency, Type and amount of investment: Minority interest,	<a href="http://www.vc.bilfinger.com/portfolio/">http://www.vc.bilfinger.com/portfolio/</a>

		typically € 1-2,5 million in the first round of funding Regional focus: Germany, Europe and USA	
Robert Bosch Venture Capital GmbH		<p>RBVC invests in start-up companies either directly or via funds on a worldwide basis.</p> <p>Investment focus: Enabling Technologies: Wireless Technologies, Network Communications, Signal Processing and interpretation, Software, Healthcare: Services, Medical Content, Information Technology, Intelligent Hardware, Patient Monitoring Devices</p> <p>Investment stage: RBVC provides capital for minority stakes in start-ups from early to expansion stage.</p> <p>Investment program: first investment is € 1.5 to 4 million, in follow-on rounds reaching typical aggregate investments of € 6 to 10 million, for a typically 10 to 20% equity position in each portfolio company.</p> <p>Region focus: World wide</p>	<a href="http://www.rbvc.com/en/investment_strategy/investment_strategy_page.html">http://www.rbvc.com/en/investment_strategy/investment_strategy_page.html</a>
BMW i Ventures		<p>The BMW Group has founded BMW i Ventures – a Venture Capital Company based in New York City</p> <p>BMW i seeks start-ups with the potential to create a lasting impact in the area of mobility services, primarily through cooperation with the BMW i brand. Additionally, these start-ups should have a strong focus on improving personal mobility in urban areas – automotive or otherwise. Whether intermodal travel, smart parking, recommendations, communication or other avenues, these services should deliver innovative and intelligent benefits to today’s growing urban population.</p>	<a href="http://www.bmw.com/com/en/insights/corporation/bmw_i_ventures/index.html#bepartofit">http://www.bmw.com/com/en/insights/corporation/bmw_i_ventures/index.html#bepartofit</a>
Siemens Venture Capital (SVC)	Venture Capital	<p>SVC invests in emerging technology start-up companies and contributes to Siemens’ innovation strategy.</p> <p>Investment: per financing round between € 2 and €5 million.</p>	<a href="http://finance.siemens.com/financialservices/venturecapital/pages/venture_capital.aspx">http://finance.siemens.com/financialservices/venturecapital/pages/venture_capital.aspx</a>
T-Venture		<p>Young companies that show economic and technological synergies with the business units of Deutsche Telekom and additionally promise above average growth potential.</p> <p>Investment sectors: Digital Services, Core Telco, IT &amp; Intelligent Networks (standards based networks to provide any to any communication for domains like Health, Energy, Logistics, Government and their cross-domain communication capabilities.)</p> <p>Financing: Start up and early expansion phases. Targeted sale of the stake / participation after 5 to 7 years. Co-investments with tier 1 VCs.</p> <p>Investment size: A minimum of € 0.5 million to a maximum of € 10 million as a minority stake. In addition to that, T-Venture allows for selected seed</p>	<a href="http://www.t-venture.com/">http://www.t-venture.com/</a>

		investments of up to € 0.3 million.  Regional focus: Europa, USA and Israel	
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### 3.5 **Banking industry**

<b>Institution</b>	<b>Name of program</b>	<b>Program Content / Description</b>	<b>Contact / url</b>
LfA Förderbank Bayern	Energy and Environment	LfA is the development bank of the Free State of Bavaria. It has the legal form of a public-law institution and has its headquarters in Munich. Low-interest financing of investments in environmental protection and energy efficiency Investment focus: Energy efficient, Environment Amount of overall Investment: Max € 2 million. Types of financing: Credit, Guarantee exemption Region focus: Bavaria Distinctive feature: up to 100% financing, SMEs	<a href="http://www.lfa.de/website/de/foerderangebote/umweltschutz/foerderangebot/index.php">http://www.lfa.de/website/de/foerderangebote/umweltschutz/foerderangebot/index.php</a>
LfA Förderbank Bayern	Start Up	LfA is the development bank of the Free State of Bavaria. It has the legal form of a public-law institution and has its headquarters in Munich. Industry focus: all Amount of overall Investment: Min. € 2.500 Max. € 10 million. Types of financing: Credit, Guarantee exemption Region focus: Bavaria Distinctive feature: up to 100% financing, SMEs	<a href="http://www.lfa.de/website/de/foerderangebote/umweltschutz/foerderangebot/index.php">http://www.lfa.de/website/de/foerderangebote/umweltschutz/foerderangebot/index.php</a>
KfW Bank	ERP-Innovation Program  ( Special Promotion for Smart Energy Projects)	With the ERP innovation program KfW fund long-term market-oriented research and the development and improvement of products, production processes and services in Germany.  Industry focus: all, special promotion for Smart Energy Amount of overall investment: up to € 5 million , for Smart Energy up to € 25 million for each project and up to €50 million for each Company Types of financing: Credit 1,0 % interest per annum Region focus: Germany Special features: for established businesses that are at least 2 years on the market, up to 60% of risk-taking by the KfW subordinate	<a href="https://www.kfw.de/KfW-Konzern/">https://www.kfw.de/KfW-Konzern/</a>

KfW bank	ERP – Start-up Loan-StartGeld	<p>For business founders, self-employed professionals and small enterprises which have been active in the market for less than three years and require little start-up capital.</p> <p>Types of financing: Loan with a term of 5 or 10 years. Up to € 100,000 in total for capital expenditure and working capital, the share of working capital is limited to € 30,000.</p> <p>Special feature: Your bank bears only 20 % of the credit risk, KfW bears 80 %. This makes it easier for the bank to decide on the loan - provided, of course, your business idea holds the prospect of sustainable economic success.</p> <p>Loan application: with your bank</p> <p>Industry focus: all</p>	<a href="https://www.kfw.de/inlandsfoerderung/Partner-der-KfW/Regionalpartner/Relevante-F%C3%B6rderprodukte/index-2.html#2">https://www.kfw.de/inlandsfoerderung/Partner-der-KfW/Regionalpartner/Relevante-F%C3%B6rderprodukte/index-2.html#2</a>
KfW Bank	ERP- Capital for Start-ups	<p>For business founders, self-employed professionals and small enterprises which have been active in the market for less than three years and do not have enough equity</p> <p>Types of financing: KfW subordinated loan with a term of 15 years and a maximum loan sum of € 500,000. However, the borrower must have a minimum amount of equity. Investments in eastern Germany and Berlin receive special support.</p> <p>Industry focus: all</p> <p>Special feature: No collateral is required for the subordinated loan. In case of liability the claims of KfW Bankengruppe rank junior to those of other creditors (subordinated liability).</p>	<a href="https://www.kfw.de/inlandsfoerderung/Partner-der-KfW/Regionalpartner/Relevante-F%C3%B6rderprodukte/058.html">https://www.kfw.de/inlandsfoerderung/Partner-der-KfW/Regionalpartner/Relevante-F%C3%B6rderprodukte/058.html</a>
KfW Bank	ERP-Start-up Loan-Universal	<p>For business founders, self-employed professionals and small and medium-sized enterprises (SMEs) which have been active in the market for less than three years and have funding requirements of up to € 10 million.</p> <p>Types of financing: Loan with a term of up to 20 years, up to € 10 million for capital expenditure and working capital.</p> <p>Industry focus: all</p> <p>Special feature: The loan interest rate is more favourable than for a conventional bank loan; it is fixed for up to 10 years, or even for the entire term</p>	

## 4 List of Funding Sources for the Basque Cluster of CLINES

This section contains a list of possible funding sources which have focus on areas related to embedded systems design and smart cities within the following categories:

- Local Authorities
- National Authorities
- Venture Capitalists
- Banking industry

The analysis and listing of the suitable funding sources in Basque Cluster has been carried out by the project partners GAIA and TEC.

### 4.1 Local and Regional Authorities

Institution	Name of program	Program Content / Description	Contact / url
Basque Government / SPRI	GAITEK	Helps support the implementation of projects aimed clearly and exclusively to the development of new products. Improve the competitiveness of enterprises by promoting projects that include R & D to develop new products.	<a href="https://app3.spri.net/ayudaspri/index.aspx">https://app3.spri.net/ayudaspri/index.aspx</a>
	ETORGAI	Aid for integrated projects of industrial research and experimental development of a strategic nature in the Basque Country. Generating new knowledge that can be useful and also are oriented to the creation of new or improved products, processes or services or the integration of technologies of strategic interest, or to create new patents and start-ups scientific and technological base, thus contributing to job creation and a better positioning of the Basque technological productive by promoting integrated industrial research projects of a strategic nature.	
Provincial Councils	BIDELAGUNA	BIDELAGUNA has grouped all the programs of business support offered by the Council of Gipuzkoa (Innovation, Internationalisation, Entrepreneurship, Learning, Network of Science and Technology, ICT, Trade) under a single umbrella, called BIDELAGUNA. In total, the Provincial Council of Gipuzkoa placed in the hands of companies Territory aids over 24.5 million €.	<a href="http://www.bidelaguna.net/es/zer-da-bidelaguna-">http://www.bidelaguna.net/es/zer-da-bidelaguna-</a>

### 4.2 Venture Capitalists / Business Angels

Institution	Name of Program	Program Content / Description	Contact / url
Innobasque	GOSASUN	Innovative and/or technology based companies provide added value to the economy of the Basque Country; they generate knowledge and their results enrich the transfer of technology and innovation to the market.	<a href="http://www.spri.es/en/creacion_empresas/servicio-vasco-de-emprendimiento">www.spri.es/en/creacion_empresas/servicio-vasco-de-emprendimiento</a>

		<p>From SPRI, through the BICs, we prioritise advanced innovation and/or technology based projects in the following sectors: Industrial, Information Technology, Advanced Software Development, Biomedicine-Biosciences, Nano- and Micro-technologies, Language Technology and Renewable and Clean Energies.</p> <p>We complement the accompaniment by facilitating business incubator spaces to new companies, well suited for every business, either in the BICs or in the Technology Parks. Moreover, when they venture abroad, they can count on the support of the SPRI international team and it's Foreign Network in more than 70 countries.</p>	<a href="#">o#sthash.sedNjGo9.dpuf</a>
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### 4.3 National Authorities

Institution	Name of Program	Program Content / Description	Contact / url
Ministry of Industry, Commerce and Tourism	ACCIÓN ESTRATÉGICA A ECONOMÍA Y SOCIEDAD DIGITAL (AEESD) STRATEGIC ACTION DIGITAL ECONOMY AND SOCIETY	<p>The Call 1/2014 , by which calls are convened by anticipate processing, grant aids are conceded for projects in the framework of Strategic Action Plan for Digital Economy and Society in the Plan of Scientific and Technical Research and Innovation 2013 -2016 .</p> <p>Initiatives that this call for aid launches are part of the Digital Agenda for Spain Agreement approved by Council of Ministers on 15th February 2013 , and the Strategic Action Digital Economy and Society of the State Plan for Scientific Research and technology and Innovation 2013-2016 .</p> <p>The Digital Agenda for Spain includes among its objectives, develop the digital economy, reduce management costs in administration and improve service to citizens, strengthening the Spanish ICT sector as a source of wealth and employment and promote R &amp; D in industries of the future. Also provides specific objectives of great importance to Spain as incorporate ICT in SMEs , security, industry or enhance digital content and services and generally to take all the objectives of the Digital Agenda for Europe 2015 and support the 2020 .</p>	<a href="http://www.minetur.gob.es/portaleyudas/aeesd/Paginas/Index.aspx">http://www.minetur.gob.es/portaleyudas/aeesd/Paginas/Index.aspx</a>
Ministry of Industry, Commerce and Tourism	AGRUPACIONES EMPRESARIALES INNOVADORAS (AEI) INNOVATIVE BUSINESS PARTNERSHIPS	<p>The support program for Innovative Business Groups (AEI) provides support with public sources to innovation strategies and business competitiveness developed by Innovative Business Groups (AEI) that are recognized as such because of their enrolment in the Special Register of AEI Ministry.</p>	<a href="http://www.minetur.gob.es/PortalAyudas/AgrupacionesEmpresariales/Paginas/Index.aspx">http://www.minetur.gob.es/PortalAyudas/AgrupacionesEmpresariales/Paginas/Index.aspx</a>



Ministry of Industry, Commerce and Tourism	APOYO A REDES DE "BUSINESS ANGELS" SUPPORT NETWORK "BUSINESS ANGELS"	The main objective of this program is to promote the development of services delivery activities by networks of "business angels" contributing to the professionalization and regulation of the activities of intermediary place between SMEs in need of capital to develop innovation projects and "investors proximity "or" Business Angels "potentially interested in funding such projects.	<a href="http://www.minetur.gob.es/PortalAyudas/Business/Paginas/Index.aspx">http://www.minetur.gob.es/PortalAyudas/Business/Paginas/Index.aspx</a>
Ministry of Industry, Commerce and Tourism	AVANZA CENTROS DEL CONOCIMIENTO Y CONTENIDOS ADVANCE CENTERS OF KNOWLEDGE AND CONTENT	The main objective of this aid is to finance dynamic projects and actuations that are directed to boost contents development and quality digital services in the Plan Avanza Framework.	<a href="http://www.minetur.gob.es/PortalAyudas/AvanzaCompetitividad/Paginas/Index.aspx">http://www.minetur.gob.es/PortalAyudas/AvanzaCompetitividad/Paginas/Index.aspx</a>
Ministry of Industry, Commerce and Tourism	AVANZA COMPETITIVIDAD (I+D+I) COMPETITIVENESS IN PROGRESS	According to the Avanza2 Plan, the actions of the subprogram Avanza Competitiveness (R+D+i) are to promote the implementation of projects and actions of Research, Development and Innovation to help achieve the following objectives: <ul style="list-style-type: none"> <li>• Respond to the Internet of the future development of the ICT sector.</li> <li>• Develop ICT technologies for Social Welfare.</li> <li>• Promote the internationalization of the ICT Sector.</li> </ul>	<a href="http://www.minetur.gob.es/PortalAyudas/AvanzaCompetitividad/Paginas/Index.aspx">http://www.minetur.gob.es/PortalAyudas/AvanzaCompetitividad/Paginas/Index.aspx</a>
Ministry of Industry, Commerce and Tourism	AVANZA CONTENIDOS CONTENT AHEAD	This program aims to promote and create a supportive environment for generation of new digital contents related to Social Interest and to the creation of Social Spaces for Innovation, as such as Knowledge Centres that show high potential for development in the Information Society. Projects and activities of this sub-program should be one or more of the following types: <ul style="list-style-type: none"> <li>• Avanza digital content.</li> <li>• Knowledge centres</li> </ul>	<a href="http://www.minetur.gob.es/PortalAyudas/AvanzaContenidos/Paginas/Index.aspx">http://www.minetur.gob.es/PortalAyudas/AvanzaContenidos/Paginas/Index.aspx</a>
Ministry of Industry, Commerce and Tourism	AVANZA CONTENIDOS DE INTERÉS SOCIAL CONTENTS OF SOCIAL INTEREST OF SOCIAL PROGRESS	This subprogram of the Avanza Plan, Avanza Digital Contents related to Social Interest, has the main objective of generate innovative digital contents and related to social interest which promote the implementation of information society among citizens, and to promote the creation of open spaces for innovation with projects development and sustainable alternatives oriented to change the current production model through intensive use of new technologies and networking coordination of these spaces for innovation.	<a href="http://www.minetur.gob.es/PortalAyudas/AvanzaContenidosIS/Paginas/Index.aspx">http://www.minetur.gob.es/PortalAyudas/AvanzaContenidosIS/Paginas/Index.aspx</a>

#### 4.4 **Banking industry**

Institution	Name of Program	Program Content / Description	Contact / url
World Bank			<a href="http://www.worldbank.org/">http://www.worldbank.org/</a>
Inter-American Development Bank			<a href="http://www.iadb.org/en/inter-american-development-bank,2837.html">http://www.iadb.org/en/inter-american-development-bank,2837.html</a>

## 5 List of Funding Sources for the Danish Cluster of CLINES

This section contains a list of possible funding sources which have focus on areas related to embedded systems design and smart cities within the following categories:

- Local and Regional Authorities (research funding, economic promotion)
- National Authorities
- Venture Capitalists / Business Angels
- Project financing organisations

The areas

- Banking industry
- Venture Capital Branches of big industry companies

are not relevant in the Danish context.

On top of the provided list, there exist a number of venture capital foundations and companies with a general profit focus. These are not part of the survey.

The analysis and listing of the funding sources for the Danish Cluster has been carried out by the project partner AAU.

### 5.1 **Local and Regional Authorities**

Institution	Name of program	Program Content / Description	Contact / url
Region North	Growth Forum	All company branches and public institutions can be supported through this programme. In general, the programme supports ICT cluster collaboration and prioritizes technologies within Wind, hydrogen, waves, bio, Medico, user-driven ideas, Intelligent transport systems. The funding can either be given directly from the regions own budget, from European regional or Social funds reserved for region North or from European funds reserved for collaboration between region North and the Swedish Gothenburg region. In general, a substantial part of the partners must come from Region North.	<a href="http://www.rn.dk/Regional-Udvikling/Vaekstforum">http://www.rn.dk/Regional-Udvikling/Vaekstforum</a> (only in Danish). An English version of the current strategy can be seen at <a href="#">strategy</a> .

## 5.2 National Authorities

Institution	Name of program	Program Content / Description	Contact / url
Ministry of Higher Education and Science, Danish Innovation Foundation	The national Danish foundation of Innovation ('InnovationsFonden')	<p>InnovationsFonden was established as of 1 April 2014 by bringing together research, technology development and innovation grants from the Danish Council of Strategic Research, the Danish National Advanced Technology Foundation and the Danish Council for Technology and Innovation into one new powerful foundation.</p> <p>The overall aim of InnovationsFonden is to support the development of knowledge and technology, including advanced technology, in order to strengthen research and innovative solutions that may benefit growth and employment in Denmark.</p> <p>This is done by investing in, and thus providing risk capital for societal partnership on innovation, thus enabling cutting-edge initiatives to achieve results that have substantial impact for the participating parties and the Danish Society. Research-based knowledge is fundamental to be brought into action at universities and within both large and small companies.</p> <p>The programme supports strategic research and innovation - including the smart society area in highly competitive sub-programs.</p>	<a href="http://innovationsfonden.dk/in-english/">http://innovationsfonden.dk/in-english/</a> , <a href="#">DSF</a> , <a href="#">HTF</a> , <a href="#">INNO+</a>
Danish Ministry of Foreign Affairs	Innovation Packs	<p>Innovation packs is a quote from the Export Council for Danish companies, who want to look for capital, knowledge, technologies or innovative cooperation partners on the international markets. If your company has less than 50 employees and an annual turnover in the last financial year of less than DKK 50 million DKK, you can search Innovation packages to markets within the EU, EFTA, North America and Oceania (Australia and New Zealand). Innovation package includes 35 hours of advice on a given market, which provided grants of 50%. You can get 3 Innovation packages on one market and a maximum of 6 boxes in total. are you instead interested in markets outside the EU, EFTA, North America and Oceania (Australia and New Zealand) and have your company under 100 employees and an annual turnover in the last financial year at under DKK 100 million. You can search Innovation packages à 50 hours plus given grants 65%. You can get 3 Innovation packages on one market and a maximum of 6 packs in everything.</p>	<a href="https://indberet.virk.dk/myndigheder/stat/T/C/Innovationspakke">https://indberet.virk.dk/myndigheder/stat/T/C/Innovationspakke</a> (in Danish)
Danish Government	The Danish Growth Foundation	<p>Growth Fund is a governmental Financing Fund, which contributes to creating more new growth companies by providing capital and expertise available. In cooperation with private investors, the Fund has since 1992 cosponsored growth in over 4,500 businesses for a total commitment of more than 12 billion. DKK. Growth Fund</p>	<a href="http://www.vf.dk">www.vf.dk</a> (in Danish)

		invests in equity in partnership with private investors and finance with loans and sureties in cooperation with Danish financial institutions. The company Growth Fund has cosponsored since 2001 employs approximately 20,000 employees spread across the country.	
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### 5.3 *Venture Capitalists / Business Angels*

<b>Institution</b>	<b>Name of program</b>	<b>Program Content / Description</b>	<b>Contact / url</b>
Sunstone Capital	Technology Ventures	Technology Ventures is an early-stage technology investor focusing on start-ups originating in northern and eastern Europe. The typical initial investments involve pre-product launch companies but it is preferred to see some sort of early indication that the market will respond to the new product. Investment amounts for initial rounds are as low as a couple of hundred thousand euros and as high as a couple of million euros.	<a href="http://www.sunstonecapital.com">www.sunstonecapital.com</a>
Novi Science Park	Borean Innovation	<p>Borean Innovation is an innovation environment. Innovation Environment scheme is created and funded by the Agency for Research and Innovation in Education and Research Ministry, in order to create and develop knowledge-based entrepreneurial companies that may become tomorrow's growth companies.</p> <p>Innovation environment invests risk capital in the very early stages of a business, where there is still considerable uncertainty about whether the business idea can be realized. The ambition is to serve as a link between knowledge entrepreneurs and the private capital market (business angels, venture capital, etc.).</p> <p>Borean acts as a catalyst for business process towards commercialization, and thus will Borean typically exit the company after 3-5 years when no longer needed a catalyst for growth.</p> <p>In Denmark, besides Borean three other innovation centres designated by the National Board for Research and Innovation.</p> <p>Borean does not have specific programme within Smart Cities.</p>	<a href="http://www.borean.dk/da/om-borean">http://www.borean.dk/da/om-borean</a>
DTU Innovation	Pre-Seed Innovation	<p>Pre-Seed Innovation is Denmark's largest pre-seed venture capital investor established to finance and assist talented entrepreneurs in developing the companies of the future.</p> <p>It invests venture capital into innovative and promising Danish high tech companies with strong management teams and we focus on Life science, Medico, ICT, Cleantech and new materials. Like the five other Danish pre-seed venture investors (innovationsmiljø) we mostly</p>	<a href="http://dsinnovation.squarespace.com/english">http://dsinnovation.squarespace.com/english</a>

		<p>invest government capital on behalf of the Danish Agency for Science, Technology and Innovation.</p> <p>Pre-Seed Innovation was established in 2009 as a merger between the two innovation incubators DTU Innovation and Symbion.</p> <p>Pre-Seed has a strategic collaboration with the Danish venture capital company SEED Capital. Learn more about SEED Capital at <a href="http://www.seedcapital.dk">www.seedcapital.dk</a>.</p> <p>Two other funding sources similar to Pre-Seed exist in other Danish regions.</p>	
New energy solutions management Aps	NES partners	<p>The Fund's investment focus is from early to late stage expansion financing based upon a credible business model and development plan for proprietary products and services. A minimum requirement for NES is that the company should have a prototype developed and a functioning organization. The team only makes equity investments and will not provide other forms of financing such as single project financing, nor purchase existing shares. However, support of demonstration project is financed as a natural step in technology verification before commercialization.</p>	<a href="http://www.nespartners.com">www.nespartners.com</a>

## 5.4 Project funding organisations

Institution	Name of program	Program Content / Description	Contact / url
Danish Industry	Danish Industrial Foundation	The Fund's purpose is to develop and support innovative, inspirational and economically sustainable projects and initiatives that strengthen the Danish industry and business competitiveness.	<a href="http://www.industriensfond.dk/">http://www.industriensfond.dk/</a> (in Danish)
Danish Industry	Alexander Foss's Industry Foundation	The main objective is to help entrepreneurs and other companies develop solutions which are technologically innovative and with the potential for commercial development.	<a href="http://www.di.dk">www.di.dk</a> (in Danish)
COWI	COWI Foundation	COWI Foundation supports research and development projects at universities or research institutions with a long-term perspective and effect within the COWI work areas, IE. advice in the field of engineering technology, environmental science and economics.	<a href="http://www.cowifund.dk">www.cowifund.dk</a> (in Danish)
Spar Nord	Spar Nord Foundation	The Foundation aims to continue the savings bank Spar Nord business through Spar Nord Bank a/s and including work for the benefit of non-profit and charitable purposes in accordance with the Board's discretion.	<a href="http://www.sparnord.dk">www.sparnord.dk</a> (in Danish)

CW Obel	CW Obel Family Foundation	In the field of research strategy in particular against the inform application-oriented research, as well as from the research community comes out in society and create value. The Foundation would at the same time to focus on the cross-cutting and innovative research, where several institutions are working the same on solving challenges for future pushed welfare society.	<a href="http://www.obel.com/en">www.obel.com/en</a>
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## 6 List of Funding Sources for the DSP Valley Cluster of CLINES

This section contains a list of possible funding sources which have focus on areas related to embedded systems design and smart cities within the following categories:

- Public Funding Sources
- Public-Private Funding Sources
- Private Funding Sources

The analysis and listing of the suitable funding sources in the DSP Valley Cluster has been carried out by the project partners DSPV and IWT.

### 6.1 *Public Funding Sources*

#### 2.1. A first introduction

For the vast majority, funding for industrially focused innovation in Flanders is handled through IWT, the Flemish agency for innovation through science and technology. The funding is done according the relevant funding decisions of the Flemish government, being:

- O&O-besluit
- SBO-besluit
- TETRA-besluit & VIS-programma

All of these funding decisions enable the incorporation of cross border projects. For close to market innovation, the “O&O-besluit” will be the prime program. The O&O-program is an open program, run all through the year with a monthly funding decision by the IWT-board. The O&O-program is being used as a funding source in multiple international funding programs, the majority being on call basis. In all cases the unified IWT cost model is applicable, although some restrictions on indirect costs are applied for the non O&O-program related projects.

In some cases TETRA & VIS might have some projects as well. TETRA, being technology transfer towards mainly SMEs driven by academic RTO’s (Research and Technology Organizations), while VIS (Flemish Innovation Stimuli) will be headed by industrial consortia of mainly SMEs, both are not limited to local projects only. Opening to international collaboration has been done occasionally (e.g. the CORNET-program, stemming from an EU funded ERANET), but this is rather limited. No special funding incentives are available for cross border aspects. TETRA/VIS is call based.

The SBO-program is dedicated to more fundamentally focused research, run by RTO’s. There is a cross border funding entity within SBO to open up this program to international collaboration.

Within an SBO project, a foreign partner (regardless which country) can have a limited contribution, funded by the Flemish funding resources. SBO is a call based program.

Apart from the IWT run funding schemes, there are initiatives by the Flemish government, such as dedicated living labs and 'lichte structuren' (LS). The projects of these LS's are audited by IWT, mainly according the O&O-program criteria. The LS work according a call principle as well.

Next, there is a yearly funding for S-RTO's (Strategic Research Centres). Related to the subject of CLINES, I-MINDS, IMEC and VITO may be partners. Especially I-MINDS can be of importance, since in parallel to their funded research, an ICON-project call is run for collaborative R&D. That collaborative R&D is funded through the IWT O&O-program. This indicates the entanglement of funding sources and project programs. The net funding towards industry and enterprises still comes through IWT funding only.

## **2.2. The O&O-program and its international dimensions**

As stated, the O&O-program is an open program, accommodating any subject of industrial technology innovation. The program is set for innovation actions ranging from TRL2 to TRL5 (extension towards TRL6, 7 and 8 being part of the current discussions) – TRL: Technology Readiness Level, where the H2020-definition is being introduced as accepted standard).

The program runs on three basic pillars:

- Research versus development (50% versus 25% of subsidy)
- Incentives for SMEs (10% incentive for MEs, 20% incentive for SEs)
- (International) collaboration: (10% incentive)

The program has restrictions and limits:

- Project funding is restricted to €3M (dedicated derogations may be granted)
- Flemish partners are restricted to a yearly IWT-subsidy assignment of € 8M (dedicated derogations may be granted)
- Economic impact (based on future looking business case related to the project, impact measured on future employment and dedicated industrial investment only) is requested upon the supplied IWT-subsidy(25 fold for neutral decision impact, 15 fold for critical decision impact, 10 fold in case of collaboration, including integration in international context). A standard derogation is foreseen in case of SME-only contribution which is budget limited ('kmo-programma', subsidy limits currently at € 250k). Other dedicated derogations might be applicable, amongst them some international collaboration settings).

## **2.3. O&O-program and international schemes (in related to the scope of CLINES)**

### **2.3.1. ECSEL**

ECSEL Joint Undertaking (JU) is the tri-partite (Industry, Commission and European Participating States) funding authority that has an overall scope of nano electronics, embedded software and smart systems, headed by the industry associations AENEAS, ARTEMIS-IA and EPoSS. The ECSEL program runs yearly calls, which have been opened in 2014 on July 9<sup>th</sup> with full project proposal closure date September 17<sup>th</sup> 17pm. The Flemish participants of the finally ranked and selected projects will be funded according the 'O&O-besluit' (see above) whereas a first part of the subsidy will be paid by the JU and IWT will supply the subsidy topping up to O&O-program funding levels. THE JU-funding will not be taken into account for economic impact calculations (see above 2.2. 'Economic Impact'). In 2014 a Research (RIA) and an Innovation/Development

(IA) call are launched. Funding levels out of the JU are based on the harmonized H2020 cost model, which is not equal to the IWT cost model, to which IWT topping is calculated. Indicative subsidy budget in Flanders for 2014 is set at € 4M for industry. Flemish Government indicative subsidy budget through Strategic Research Centres is set at € 10M.

### **2.3.2. ITEA3**

ITEA3 is a EUREKA cluster program, run by the ITEA3 office and based on a yearly call system. ITEA3 will have a next call for project (PO) running from September 23<sup>rd</sup> 2014 till October 31<sup>st</sup> 2014. Accordingly a full proposal phase will be run from mid December 2014, closing mid February 2015. Consecutive national funding application (regular O&O-project application at IWT) is planned past final labelling, mid-March 2015. Funding is according to the O&O-program ruling (see 2.2.) automatically including the ‘collaboration incentive’ of 10%.

ITEA3 focuses on embedded and large software aspects, and has partly overlapped with the ECSEL scope of projects.

### **2.3.3. CATRENE (which might evolve into a future GENESYS past 2015)**

CATRENE is a EUREKA cluster program, run by the CATRENE office and based on a yearly call system, allowing ‘unsolicited’ project handed in all through the year. CATRENE has call running (Full Project Proposal phase) closing on September 30<sup>th</sup> 2014 Consecutive national funding application (regular O&O-project application at IWT) is planned in parallel or after CATRENE labelling. Funding is according to the O&O-program ruling (see 2.2.) automatically including the ‘collaboration incentive’ of 10%.

CATRENE focused on nano-electronics materials, processes and design. In its reach towards applications, embedded software sub-project might be incorporated, especially in view of demonstrators. CATRENE has a major content overlap with the ECSEL program.

### **2.3.4. AAL Joint Programming Art.185 H2020**

The new AAL JP is fully in line with the European Innovation Partnership on Active and Healthy Ageing as it covers the ICT based innovation sphere. Furthermore, the renewal of the program will make possible again the joint work of the European Commission together with the participating countries. The call of 2014 (first call of the novel AAL under H2020) was closed on Thursday June 26<sup>th</sup>. A novel call is expected each year. Participants may expect a reduction on their requested economic impact by 30%.

### **2.3.5. Eurostars**

Eurostars is an open transnational program, where projects have partners from two or more Eurostars countries, focussed at SMEs Thanks to this international collaboration, SMEs can more easily gain access to new markets. The Eurostars program is publicly financed with a total budget of 1.14 billion euro and is currently supported by 33 EUREKA countries and the European Union. An average project profile contains 3 to 4 participants, out of 2 to 3 countries, project duration of 30 months and a budget of € 1,4M. Closing date of next call is September 11<sup>th</sup> 2014. A yearly call is set-up. Participants may expect a reduction on their requested economic impact by 30%.

### **2.3.6. ERANET+**

Occasionally there are ERANET+ dedicated calls to which Flanders enlists. Currently none is running with a CLINES affiliation. If one is running, conditions are equal including that participants may expect a reduction on their requested economic impact by 30%.



There are ERANET actions ongoing, which may attract projects in line with CLINES:

- Smart Grids
- ERANET TRANSPORT II. This ERNET might get affiliations with traffic management systems or car-to-car communications

## 6.2 Public – Private Funding Sources

### 6.2.1 Venture Capital<sup>3</sup>

	Amount (in mio)								Investment Stage							
	< 0,125	0,125 - 0,25	0,25 - 0,5	0,5 - 1,25	1,25 - 2,5	2,5 - 5	5 - 10	> 10	seed capital	start-up capital	growth financing	MBO, MBI, buy-outs, OBO	Acquisition financing	Pre-IPO	IPO	Arkimedes
<b>Public Venture Capital</b>																
Belgische Investeringsmaatschappij voor ontwikkelingslanden (BIO)				x	x	x	x	x			x					
Belgische Maatschappij voor internationale investering (BMI)				x	x						x					
Biotech Fonds Vlaanderen	x	x	x	x	x	x	x	x	x	x	x			x	x	
Federale Participatie- en investeringsmaatschappij (FPIM)							x	x			x					
LRM	x	x	x	x	x	x	x	x	x	x	x	x	x			x
PMV - Cultuurinvest	x	x	x	x						x	x					
PMV - Flanders' Care Invest		x	x	x	x				x	x	x					
PMV - Fonds Vlaanderen Internationaal (FVI)				x							x					
PMV - Groeimezzanine				x	x	x					x	x	x			
PMV - Innovatiemezzanine	x	x	x							x						
PMV - Kidsinvest	x	x	x							x	x					
PMV - Participatiefonds Vlaanderen	x	x							x	x	x					
PMV - TINA			x	x	x	x	x			x	x					
PMV - Vlaams Innovatiefonds (VINNOF)		x	x	x	x					x	x					
Stroominvest	x	x	x						x	x	x					

<sup>3</sup> Source : Overzicht van risicokapitaalverschaffers 2014, Agentschap Ondernemen

## 6.3 Private Funding Sources

### 6.3.1 Venture Capital<sup>4</sup>

	Amount (in mio)							Investment Stage								
	< 0,125	0,125 - 0,25	0,25 - 0,5	0,5 - 1,25	1,25 - 2,5	2,5 - 5	5 - 10	> 10	seed capital	start-up capital	growth financing	MBO, MBI, buy-outs, OBO	Acquisition financing	Pre-IPO	IPO	Arkimedes
<b>Private Venture Capital</b>																
3D Participaties						x	x	x			x	x	x			
Allegro Investment Fund	x	x	x	x					x	x						
Ark Angels Activator Fund		x	x	x	x				x	x	x	x	x			x
Belfius Private Equity					x	x	x	x			x					
Beluga		x	x	x	x						x	x	x	x		
BEM II				x	x											
BNP Paribas Fortis Private Equity			x	x	x	x	x	x			x	x	x	x		
Capital@Rent			x	x	x	x	x	x			x	x	x	x		
Capital-E II			x	x	x	x			x	x	x					x
Capricorn Cleantech Fund			x	x	x	x	x		x	x	x					
Capricorn Health-tech Fund			x	x	x	x	x		x	x	x					
Capricorn ICT Arkiv			x	x	x	x			x	x	x					x
Creafund II				x	x	x	x				x	x	x	x		
Damier						x	x	x			x	x	x			
Domo Investment Group					x	x	x	x			x	x				
Down 2 Earth Capital					x	x	x				x	x				
E-Capital III						x	x	x			x	x				
Falcon Fund				x	x	x					x	x				
Fidimec	x	x	x	x					x	x	x					
Fin.Co						x	x	x			x	x	x	x	x	
Finindus				x	x	x	x			x	x					
Gemma Frisius Fonds	x	x	x	x					x	x						
Gimv				x	x	x	x	x		x	x	x		x		
Gimv Arkiv Tech Fund II				x	x	x				x	x					x
Gimv Health & Care Fund						x	x	x			x					
Hefboom	x	x	x							x	x					
Hummingbird Ventures			x	x	x				x	x	x					x
Indufin						x	x	x			x	x	x			
ING België – Corporate Investments						x	x	x			x	x	x	x		

<sup>4</sup> Source : Overzicht van risicokapitaalverschaffers 2014, Agentschap Ondernemen

KeBeK Private Equity					X	X	X	X				X	X	X	X		X
Korys Direct Investments						X	X	X				X	X	X	X		
Mezzanine Partners 1						X	X					X	X	X			
Nausicaa Ventures			X	X	X					X	X	X	X	X			
PE Group				X	X	X						X	X	X	X		
Pentahold					X	X	X	X				X	X	X	X		
Profinpar			X	X	X	X						X	X	X	X		
Qbic Fund	X	X	X	X	X	X				X	X						X
Saffelberg Investments			X	X	X	X						X	X	X			
Sherpa Invest II			X	X								X		X	X		
SP² Fund			X	X						X	X						
Sniper Investments			X	X	X							X	X	X	X		
Sociaal Investeringsfonds De Punt	X									X	X	X	X				
Sofindev III						X	X	X				X	X	X	X		
Software Holding & Finance	X	X	X	X						X	X						
Stroke Fund				X	X							X	X				
Triodos Renewables Europe Fund					X	X	X										
Trividend	X	X								X	X						
Trustcapital				X	X	X	X	X				X	X				
Vectis Arkiv		X	X	X	X	X					X	X	X	X			X
Vectis Participaties II		X	X	X	X	X					X	X	X	X			
Vendis Capital			X	X	X	X	X	X				X	X	X			
Ventures4Growth			X	X	X	X				X	X	X	X	X	X	X	
Vermec				X	X	X					X	X	X	X	X		
Vesalius Biocapital II Arkiv			X	X	X						X	X					X
Volta Ventures			X	X						X	X						
Waterland Private Equity				X	X	X	X	X				X	X	X	X	X	
Yukon		X	X	X	X						X	X	X	X			
BAN Vlaanderen	X	X	X	X	X	X				X	X	X					
Buysse&Partners	X	X	X	X	X	X	X	X				X	X	X			

### 6.3.2 Crowd funding<sup>5</sup>

	Amount (in mio)							Investment Stage								
	< 0,125	0,125 - 0,25	0,25 - 0,5	0,5 - 1,25	1,25 - 2,5	2,5 - 5	5 - 10	> 10	seed capital	start-up capital	growth financing	MBO, MBI, buy-outs, OBO	Acquisition financing	Pre-IPO	IPO	Arkimedes
<b>Crowdfunding</b>																
Angel.me	x	x							x	x	x					
Crofun	x								x	x	x		x			
Look & Fin	x	x									x					
MyMicroInvest	x	x	x	x	x	x	x		x	x	x					
Socrowd	x									x	x					
World of Crowdfunding	x								x	x						

### 6.3.3 Belfius – Smart Cities & Sustainable Development programme

Developed through collaboration between the European Investment Bank (EIB) and Belfius Bank, the "Smart Cities & Sustainable Development" programme is aimed at assisting and providing financial support to towns and cities – including the smallest ones – for their so-called "smart and sustainable" mobility, urban development and energy efficiency projects. Under this programme, Belgian local authorities will, as from 4 June 2014, be the first in Europe to benefit from preferential rate loans for the implementation of their "Smart Cities" projects up to a total of EUR 400m, half of which from the EIB and the other half from Belfius Bank.

<sup>5</sup> Source : Overzicht van risicokapitaalverschaffers 2014, Agentschap Ondernemen

## 7 European budget financial Sources

This section presents an overview of EU budget financial sources relevant to Smart Cities<sup>6</sup> and Embedded Systems.

### 7.1 EU Funding opportunities for Smart Cities for 2014 -2020

#### 7.1.1 Budget allocation per program

	Sub-total per program	Climate earmarking %	Climate earmarked in € million	Description / Comment
<b>HEADING 1: Smart and Inclusive growth</b>				
<b>Horizon 2020</b>	€87 000 mln	35%	€18 500 mln	Contributions include the following: Secure, clean and efficient energy with a proposed budget of €6.5 billion, Smart, green and integrated transport with a proposed budget of €7.7 billion, Climate action, resource efficiency and raw materials with a proposed budget of 3.6 billion Euro. Calls for projects specific to Smart Cities will be launched, and other calls may be linked to urban needs, such as grids, waste to energy, etc.
<b>COSME</b>	€2 500 mln			The programme will target actions to improve and strengthen the competitiveness and sustainability of EU enterprises, and in particular of SMEs. This programme can be used to support the development of skills and innovative companies offering the services required in a smart city.
<b>Sub-heading: Economic, social and territorial cohesion</b>				
<b>Cohesion Policy, including ERDF and ESF</b>	€325 149 mln	20 % of national ERDF allocations in developed / transition regions 6 % in less developed regions	€ 16 000 for EE/RES investments. A minimum of €16 257 mln for urban areas.	The earmarked funds concern only EE/RES activities as proposed by the EC. Other climate related activities in the transport sector or in relation to climate change adaptation could also be financed outside of the earmarking exercise. Additionally, a minimum of 5 % of national ERDF allocations are earmarked for sustainable urban development activities, which could include activities related to transport, energy and ICT. The urban dimension of these policies will depend on regional plans.
<b>CEF - Transport, energy and ICT</b>	€29 300 mln			The CEF is dedicated to Trans-European Networks. These will have an impact on decisions at local level, as local infrastructures will need to adapt. Will the region, for example, be well connected to external sources of, or demand for, energy?

<sup>6</sup> Source: Using EU Funding Mechanisms for Smart Cities, Smart Cities Stakeholder Platform, November 2013.

<b>HEADING 2: Sustainable growth, natural resources</b>				
<b>CAP: Pillar 2 EARDF</b>	€85 000 mln	25 % (although it should be noted that this is not a binding requirement for Member States)	€ 21 250 mln	The rural development funds aim at investing an important share of the funds on climate related investments. These can be of relevance to urban areas in particular if related to energy production. The development of stronger links with rural areas and the exploitation of possible new market opportunities should also be considered.
<b>LIFE+</b>	€3 600 mln		€ 902 mln	The new 'climate change' component of the LIFE programme can be used to promote both mitigation and adaptation activities in urban areas. These can be related to seed capital, testing and pilot projects, exchange of good practice and improving governance

### 7.1.2 Financial Instruments, respective activities and target groups

<b>Program</b>	<b>Financial Instrument</b>	<b>Objectives and types of activities</b>	<b>Target/Beneficiary</b>
<b>HEADING 1: Smart and Inclusive growth</b>			
<b>Horizon 2020</b>	Grants	The programme is designed to support RDI (Research Development and Innovation) activities, but also to address market failures by supporting high risk and long-term RDI that would not necessarily be pursued otherwise. The focus includes inter alia secure, clean and efficient energy (including the successor to the IEE II); smart, green, integrated transport and climate action.	Any public or private entity. Particular attention shall be paid to SMEs.
	Debt Facility	The debt facility aims to address a current gap in the market between the demand for and supply of loans and guarantees for risky R&I investments, building on the RSFF. The RSFF is largely demand driven, so climate, energy, transport and ICT related activities are not the only focus. However, the EIB does give more weight to projects that are in line with the EU climate objectives.	Legal entities of all sizes, SMEs with the potential to carry out innovation and grow rapidly; mid-caps and large firms; universities and research institutes; research infrastructures and innovation infrastructures; public-private partnerships; and special purpose vehicles or projects.
	Equity Facility	The equity facility aims at improving the availability of equity finance for early and growth-stage investments, and to boost the development of the EU venture capital market. This should in particular help during the technology transfer and start-up phase, when new companies face the so-called 'valley of death', i.e. where public research grants stop and it is not yet possible to attract private finance.	Enterprises of all sizes undertaking or embarking on innovation activities, with a particular focus on innovative SMEs and midcaps. This facility may be of particular importance to large innovative demonstration projects in cities.

<b>COSME</b>	Grants	The programme will target actions to improve and strengthen the competitiveness and sustainability of EU enterprises, and in particular SMEs; actions intended to develop new competitiveness strategies including inter alia design, implementation and evaluation of policies affecting the competitiveness and sustainability of enterprises, including disaster resilience and the development of sustainable products, services and processes; initiatives accelerating the emergence of competitive industries including initiatives to enhance productivity, resource efficiency, sustainability and corporate social responsibility.	Existing entrepreneurs (small businesses in particular); Future entrepreneurs (including young people) and national, regional and local authorities. These funds can be used by cities to develop new business models and the capacity and the economic fabric necessary to run an efficient smart city.
	Loan Guarantee facility (LGF)		Expansion and growth-stage enterprises, in particular those operating across borders. It allows making investments in early stage enterprises in conjunction with the equity facility for RDI under Horizon 2020.
	Equity Facility for growth (EFG)		
<b>Cohesion Policy, including ERDF, CF and ESF</b>	Grants	Financing through both grants and innovative financial instruments can target all types of projects pursuant to one of the 11 thematic objectives, including activities supporting the transition to a low-carbon economy, adaptation to climate change and risk prevention, sustainable and low-carbon transport, and eco-innovation in SMEs. These can include: productive investment, particularly job creation and SMEs support; investments in infrastructure in the areas of energy, environment, transport, and ICT; social, health and educational infrastructure; development of endogenous potential by supporting regional and local development and research and innovation; and technical assistance.	Managing authorities who determine the specific target group / beneficiary for different priority axes across the Operational Programmes. These could be any public or private legal entity, SMEs, citizens NGOs, etc. and governmental agencies/utility providers in cases of public infrastructure.
	Loans, guarantees, equity and risk-sharing mechanisms		
<b>CEF</b>	Grants	Projects of common interest in the area of transport, energy and ICT at Trans-European Level.	Project developers (which could be governmental bodies or private operators)
	Equity, loans and/or guarantees facilitated by risk sharing instruments, including enhancement mechanism to project bonds	Projects of common interest in the area of transport and energy.	

<b>HEADING 2: Sustainable growth, natural resources</b>			
<b>EARDF (European Agricultural Fund for Rural development)</b>	Grants	Financing through both grants and FI can target all types of project pursuant to one of the 6 priorities (and 18 sub priorities, known as ‘focus areas’, including activities supporting the transition to a low-carbon economy and adaptation to climate change and risk prevention. Examples of funding could cover physical investments for rural infrastructure (such as investments for the installation of biogas plants, building insulation, modern machinery, etc.), and development of human capacity (such as training and the provision of advice).	The EAFRD targets farmers, forestry and other land managers as well as communities, businesses and individuals in rural areas. There is scope for a better integrated development with cities in the area of energy and transport, as well as water use distribution and efficiency.
	Loans, guarantees, equity and risk-sharing mechanisms		
<b>LIFE+</b>	Grants	The new 'climate change' component of the LIFE programme can be used to promote mitigation, adaptation and governance activities. The focus is pilot projects, demonstration projects; best practice projects; integrated projects, technical assistance, preparatory projects; and information, awareness and dissemination projects.	Private (e.g. SMEs) and public bodies. Some of the LIFE funding will focus on cities according to the European Adaptation Strategy. In particular, larger cities will need an adaptation strategy as well as a mitigation one. These will need to be coherent.

## **7.2            *European Funds for areas related to embedded Systems***

### **7.2.1        *EU-The ECSEL Joint Undertaking***

The ECSEL Joint Undertaking is established within the meaning of Article 187 of the Treaty on the Functioning of the European Union for the implementation of the Joint Technology Initiative on 'Electronic Components and Systems for European leadership' for a period up to 31 December 2024. The programme supports all aspects of smart cities in a combination with the key technologies ‘Semiconductor Process, Equipment, and Materials’. ‘Design technologies’ and ‘Cyber Physical Systems’.

### **7.2.2        *EU - The JESSICA initiative***

The JESSICA initiative (Joint European Support for Sustainable Investment in City Areas) was launched in 2006 to assist EU Member States in establishing ‘Financial Engineering Instruments’ for urban renewal and regeneration. Managing Authorities are offered the possibility to invest some of their EU Structural Funds allocations in ‘Financial Instruments’ (revolving funds) supporting urban development. These revolving funds are Urban Development Funds investing in Public-Private partnerships and other urban projects forming part of integrated plans for sustainable urban development.



### 7.2.3 EU/EIB – Risk Sharing Facility

The EC and the EIB (*European Investment Bank*) have created the Risk Sharing Financing Facility (RSFF) as a Joint Financial Instrument (JFI) to alleviate the lending constraints in the Research, Development and Innovation (RDI) sector, by financing promoters of RDI investments that would otherwise not attract other sources of debt financing on acceptable terms due to their risk profile. The RSFF is a joint effort of the EIB and the EC, with each providing half the Facility's EUR 2bn capital cushion. This amount is then leveraged to provide loans, guarantees and equity-type investments, with a total estimated volume of approximately EUR 10bn for projects with a higher than normal risk profile. Under the RSFF, the EIB provides direct debt financing for amounts normally above EUR 25m. Urban projects with an innovative character are in principle eligible for RSFF financing. In Flanders BELFIUS has come to an agreement with the EIB regarding loan guarantees for innovative start-ups.

## 8 Conclusion

Within the activity 2.1.3 the project partners have identified financing instruments in each region. Local and national authorities in each region provide a set of funding programs to promote R&D projects for innovative products and processes that focus on smart mobility, smart energy, smart living and embedded systems technology. However the vast majority of these programs have a regional focus. Only a few public funding programs with international dimension are identified by the project partner DSP Valley in Belgium.

For the period 2014-2020 EU Funds provide new opportunities which promote advanced technologies for Smart Cities with focus on transport and energy.

CLINES relevant areas are also in focus of a numerous private funding programs. Venture Capitalists, Venture Capital Branches of big industry companies and Banking industry provide capital to innovative Start-ups with strong focus on new forms of mobility, smart living and enabling technologies including Storage, smart power and energy efficiency.

Clear and practical information in this document will assist CLINES project by pooling the most suitable resources from private and public financial bodies for innovation cross border R&D projects within work package 4.