École des Ponts ParisTech

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5th Project meeting

Aartselaar (1st April, 2014)

RainGain

RainGain platforms for training and communication

Communication and training platforms: background needs

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	COMMUNICATION	TRAINING
WHY ?	To raise awareness on the problem of urban pluvial floods and the available solutions	To train (present and future) managers and users of the radar data and of the tools developed on the base of these data
FOR WHOM ?	• Inhabitants (flood-prone areas and areas nearby the radar) • Policy makers • journalists • Children and elders	• Engineers/other professionals from LAs & private sector • Operators of sewer systems, programmers • Emergency management services, fire brigades • University students

Communication and training platforms: background needs

	COMMUNICATION	TRAINING
WHICH CONTENTS ?	• Risks of urban flood • Solutions implemented • Solutions newly developed • Radar security issues	• Data interpretation & prevision methodologies • decision support tools • Floods action plans (before/after) • Pros/cons of data and solutions developed • General scientific education
HOW ?	• Press • Web 2.0 (dedicated website, social networks, smartphone applications, viral videos, interactive map) • Individual communication (workshops in schools, participation to festivals) • Publications	• Courses, tutorials, workshops, internships • Quiz, simulation of case studies • E-learning (online presentations, webinars, demonstration videos, e-library) • Training materials co-created by scientists & professionals • Prevision system available online, open data

Communication and training platforms: good practices by RG partners

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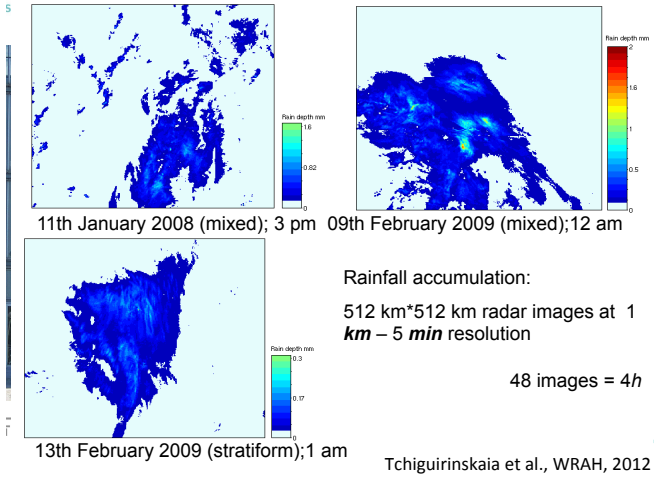
- RainGain Itinerant Laboratory
- RainGain Local Authorities Meeting
- Workshops for Master students at ENPC: e.g. radar data analysis exercise
- Météo France network of voluteers for weather observations (1200 measurements points in France) http://videos.tf1.fr/jt-we/2013/rencontre-avec-un-observateur-benevole-pour-meteo-france-8317750.html

Convective vs. stratiform rainfall

Do they have different spectral and/or multifractal signatures ?



Tchiguirinskaia et al., WRAH, 2012

Communication and training platforms: Other good practices

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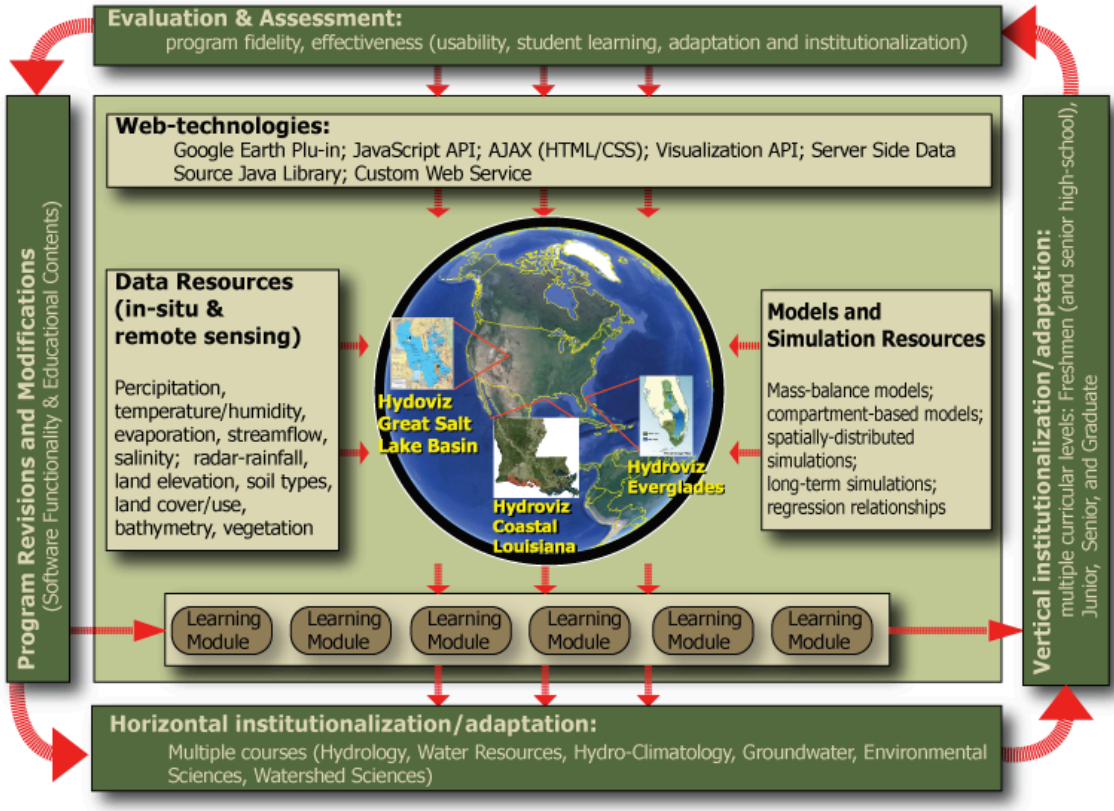
- **HYDROVIZ: active learning in the field of Hydrology by creating case-based, data and simulation-driven learning experiences**

- Flexible and adaptable learning modules based on recent research advances on monitoring and modeling of complex hydrologic systems

- 3 US regional-scale natural systems (Coastal Louisiana, the Florida Everglades, and the Great Salt Lake Basin in Utah)



Communication and training platforms: Other good practices

- Citizen observatories: e.g. CobWeb enables citizens to collect environmental information on a range of parameters including species distribution, flooding and land cover and use. Use of mobile devices and crowd-sourcing of geographic information.
- PUB Singapore Water ambassadors: Targeting schools and Scouts Association this programme allows students to be trained as Water Ambassadors who will help spread our water messages to their schoolmates, families and friends.

COBWEB
Citizen Observatory Web

Water ambassadors: wanted!

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Communication and training platforms: Possible funding after RainGain

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- Next Interreg NWE call at the end of April 2014

Annual conference in Lille in 14/11/2013

> Focus on public involvement, governance and innovation

> No more investments, but actions related to the present investment

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Report on Communication plan and activities

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- **Communication indicators in 2013**

- **Provisional plan based on feedbacks from JTS**

LAST RESULTS

July 2013 – March 2014

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- **Local Authorities Meeting (23/10) 46 attendees**
- **RG presented to stakeholders from the water, ecological, transports, urban sectors (companies, public authorities, consultants)**: General Assembly of Arceau-Idf (FR), 66ste Holiday Course Water Technology (NL), AMICE Final Conference (FR), Urban Drainage Group Conference (UK)
- **RG on the media: non-specialised press** (Le Parisien, Val-de-Marne Magazine, Sucy Info, Tv Val, OmroepWest, Rtl Tv) and **specialised press** (Hydroplus, Riorama)

Le Parisien

Bientôt un super radar pour mieux prévoir la pluie

Les chercheurs du projet international « Rain Gain », dont le département est partenaire, se sont réunis hier au MAC/Val à Vitry pour exposer leurs travaux.

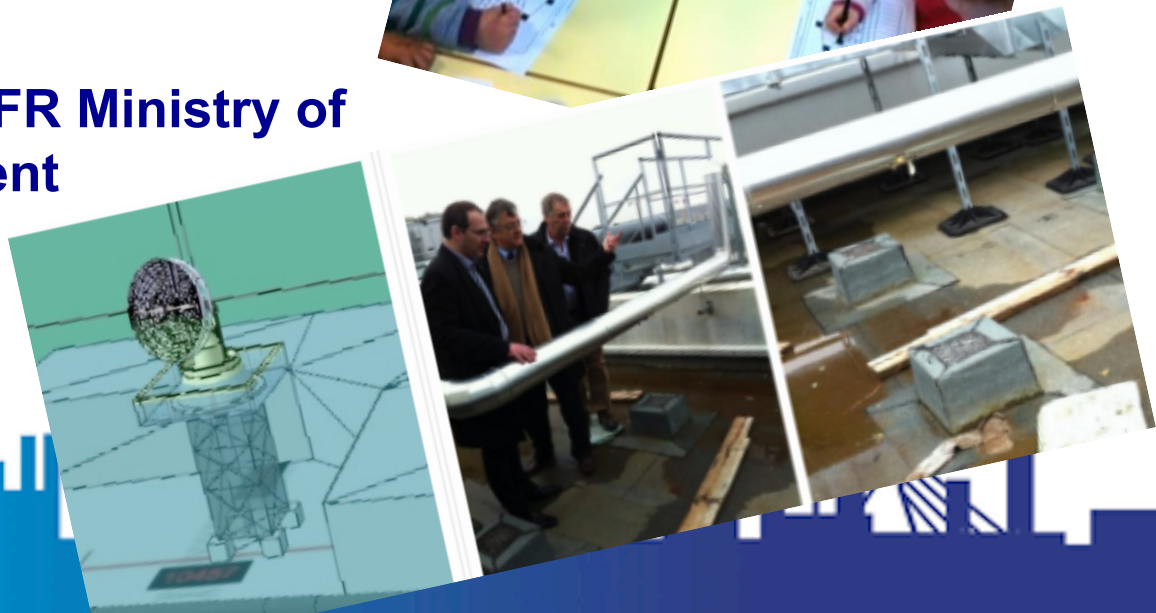
Oubliez la grenouille qui monte à son échelle. Pour prévoir la météo, et notamment les précipitations, faites plutôt confiance à un radar. C'est en tout cas ce qu'a fait le conseil général en rejoignant le projet international « Rain Gain », dont les chercheurs se sont réunis hier au MAC/Val à Vitry.

Associant une dizaine de partenaires, dont le département voisin de la Seine-Saint-Denis, l'école des Ponts et d'autres universités européennes, « Rain Gain » a pour objectif d'améliorer la prédiction de la pluie par

LAST RESULTS

July 2013 – March 2014

- **RG itinerant laboratory**: 1 kinder garden
- **Partners' common document on F.A.Q. and future communication/ training needs**
- **Consultation meetings with representatives of workers using the buildings nearby the future French radar** > outputs: e.g. increased radar height
- Official support from the **FR Ministry of Sustainable Development**



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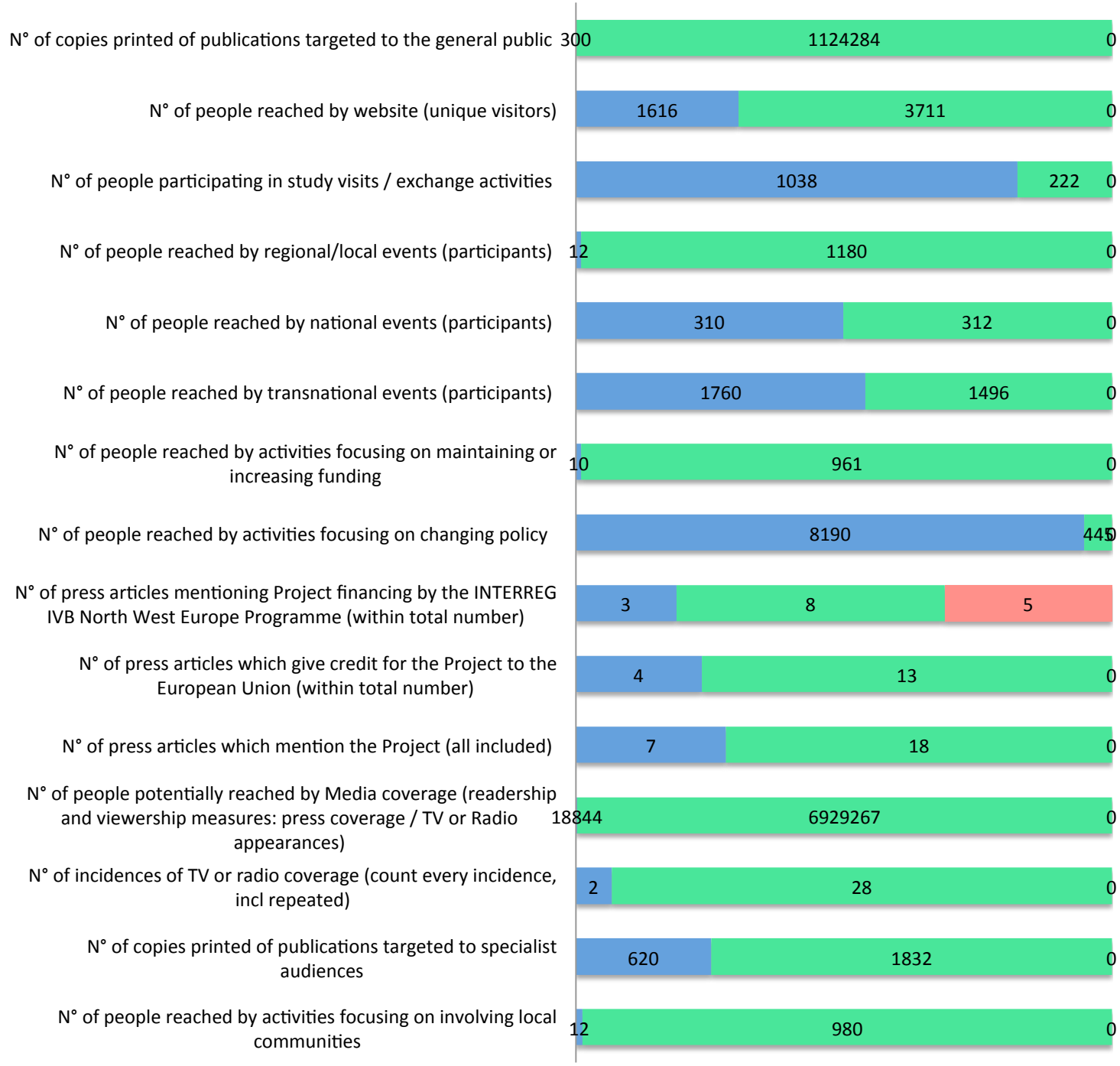

Communication impact indicators in 2013

Targets to be fulfilled:

- **Press articles mentioning the Programme Interreg NWE IVB**

2010-2012

2013

Target value

Communication tools indicators in 2013

Targets to be fulfilled:

- Activities to maintain/ increase funding
- Transnational meeting at governmental level
- Networking with non-public sector
- Translated documents
- Press releases in all partner regions
- Involvement of local communities and stakeholders
- Academic articles mentioning the project

www.raingain.eu

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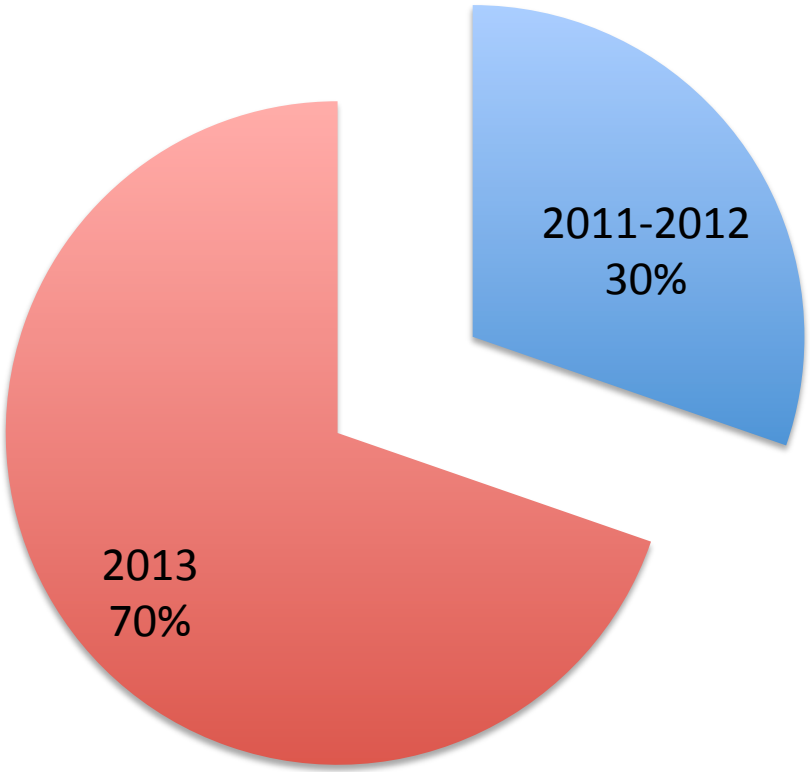
Unique visitors

1614 unique visitors



3711 unique visitors

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New visitors in 2013

	Source	3 647 % du total: 100,08 % (3 644)	3 647 % du total: 100,08 % (3 644)
1.	(direct) / (none)	1 583	43,41 %
2.	google / organic	713	19,55 %
3.	enpc.fr / referral	489	13,41 %
4.	raingainproject.wordpress.com	191	5,24 %
5.	tudelft.nl / referral	130	3,56 %
6.	www3.imperial.ac.uk / referral	51	1,40 %
7.	google.fr / referral	34	0,93 %
8.	t.co / referral	32	0,88 %
9.	mamessagerie.cg93.fr / referra	30	0,82 %
10.	imperial.ac.uk / referral	24	0,66 %

page		visits	unique visits
		28 515 % du total: 100,00 % (28 515)	16 663 % du total: 100,00 % (16 663)
1.	/en/node/4619	4 315 (15,13 %)	2 478 (14,87 %)
2.	/en/four-cities-gain-rain	3 288 (11,53 %)	1 398 (8,39 %)
3.	/en/actualite/raingain-urban-rain-12-switzerland	745 (2,61 %)	568 (3,41 %)
4.	/en/raingain	891 (3,12 %)	475 (2,85 %)
5.	/en/papers	431 (1,51 %)	331 (1,99 %)
6.	/en/rotterdam	522 (1,83 %)	329 (1,97 %)
7.	/en/european-local-authorities-meeting-rencontre-europeenne-des-collectivites-locales	410 (1,44 %)	308 (1,85 %)
8.	/en/4th-raingain-project-meeting-ecole-des-ponts-paristech	404 (1,42 %)	286 (1,72 %)
9.	/en/paris	481 (1,69 %)	277 (1,66 %)
10.	/en/16th-april-2013-second-uk-nog-meeting	468 (1,64 %)	248 (1,49 %)

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Top 10 RainGain pages in 2013

Your feedbacks on the intranet performance

- Can you easily enter your account?
- Can you easily upload a document?
- Can you easily share a document with a colleague
- Can you easily find a document?
- Are the restrictions on the file type and file size adequate?
- Are there sensitive documents that should be protected by a password?
- Are there any other technical problems?
- Any other remark?

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WHAT'S NEXT?

New NOG members:

UK: network mangers, public health officials, SEPA, NRW, CLEAR, INNOVIZE, Flood Resilient Cities, Cardif Local Council

FR : ARCEAU, Advancity, Waste water service of Paris, CSTB, IFSTTAR, Préfécture de Paris (crisis dpt), fire brigade, environmentalist associations (Fondation Hulot) **> *possibly postpone next meeting***

BE: will exploit networks of PLURISK and Aquafin storm water master plans for municipalities

NL: Rioned + network developed by PZH through questionaries

> Intensifying use of group discussion, surveys, video-conferences to include stakeholders' inputs in the project

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WHAT'S NEXT?

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Strengthening exchange with civil society:

- National Flood Forum (attended by flood action groups)
- Report by LGFF on community groups' control of flood management
- RG itinerant laboratory. RG web TV?
- ICL with GLA: community flood plan and training material with links with RG
- Possible links between RG and Diane-cm (collaborative modeling website)

Lobbying national/EU policy makers:

- Letter to FR political parties
- Round table event with UK parliamentarians
- Links between RG and KUL project of a flood management/evacuation decision support system for the City of Antwerp
- Possible article on DG Env publications
- Interesting events: Regio Stars, Open Days, British Science Festival, UK National Science & Engineering Week

WHAT'S NEXT?

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Involvement of private companies:

- WSP group, Thales
- radar manufacturers (FURUNO, SELEX, Novimet)
- water companies (Vivaqua, Belgaqua, Water-Link, HydroScan)
- CLEAR consultancy, INNOVIZE
- PUB (Singapore's National Water Agency)
- Survey of PZH

Partners' common activities:

- 2nd Local Authorities meeting in 2014 (LGFF, CG94, Rotterdam City, Aquafin)?

> Strengthen internal communication to increase visibility of activities in NL, UK, BE

> Local communication actions in NL, UK, BE (events, press release) > partners com budget + Enpc coordination

Transnational Flyer

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Four cities gain rain.
RainGain pilot sites.

Rotterdam

An dual-polarization X-band rain radar will be installed on the roof of one of the highest building in Rotterdam city centre. The radar will make it possible to measure precipitation patterns in the city much more accurately and, as such, facilitate improvements in the quality and efficiency of the city's water management. Possible applications for the data include the intelligent control of pumping stations, the use of water storage (such as the water squares) and local weather reports.

Paris Region

An dual-polarization X-band radar will be installed in the East side of the Île-de-France Region. Ensuring a sustainable development of this region, i.e. switching from high vulnerability to resilience, is a shared goal of its inhabitants and its political institutions. With two main drivers – climate change and ongoing urbanisation – stormwater management is a key challenge.

Greater London

In London, a C-band rain radar owned by the Met Office radar will be upgraded thanks to a super-resolution protocol. Furthermore, three floodprone areas were selected as pilot sites: Cranbrook catchment (in the Borough of Redbridge), Purley area (in the Borough of Croydon) and Torquay Town Centre (in the South Devon Borough

Leuven

In the city of Leuven, rainfall is measured since 2008 by KUL and Aquafin with an X-band polarimetric radar. In the RainGain project, rainfall data from different sources will be combined and integrated with Numerical Weather Prediction of RMI to obtain fine-scale rainfall nowcasts.

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RAINGAIN unites 13 partners and is funded by European Union trough the NEW Interreg IVB Programme (www.nwe.eu).

Technical University of Delft
Provincie Zuid Holland
Gemeente Rotterdam
Katholieke Universiteit Leuven
Aquafin
École des Ponts ParisTech
Conseil général du Val-de-Marne
Conseil general de Seine-Saint-Denis
Météo France
Met Office
Local Government Flood Forum
Veolia Environnement

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RainGain

Advanced observation and rainfall prediction for urban pluvial flood management

www.raingain.eu
@RainGainProject

Transnational Flyer

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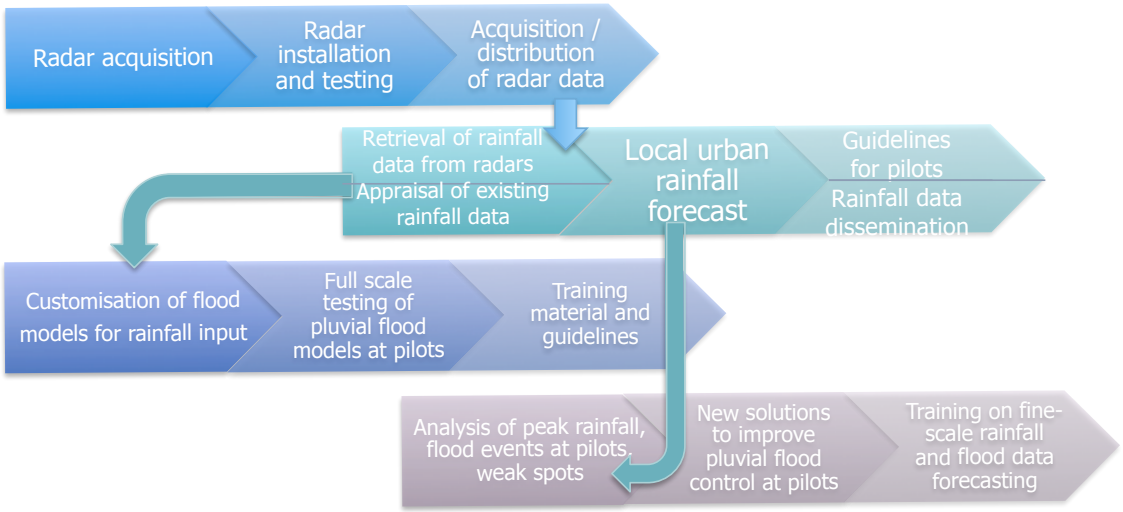
What is it about?

When a storm hits an urban area, in a few minutes there are millions m^3 of water that must be managed in order to avoid a flood: should the water be stored, for its anti-pollution treatment, or on the contrary it has to be released as soon as possible? Should a warning be launched, flows of vehicles diverted, residents evacuated?

These events can be better managed with a radar able to detect changes in a storm area at street level and every minute. Thanks to this technology, the research project RainGain develops solutions for improved flood management in the city.



INSTALLATION AND TESTING OF RAINFALL RADARS – Weather radars are the only measuring devices that provide space-time estimates of rainfall. RAINGAIN will test the recent technology of X-band radars (i.e. emission frequency close to 10 GHz) for urban water management. Their higher frequency with respect to classical S-band and C-band radars allows to increase the spatial scale resolution by a factor of about ten (from Km to hm scale), hence to increase the number of precipitation data pixels by a factor of a hundred. Furthermore, these radars are lighter and less expensive, and would be manageable and affordable to local water authorities.

FINE-SCALE RAINFALL DATA ACQUISITION AND PREDICTION – RAINGAIN will develop a system for estimation and forecasting of local rainfall on the basis of data, acquired from high-resolution rainfall radars (X-band and super-resolution C-band) in combination with traditional rainfall measurement devices. Improved rainfall estimates and rainfall now-casts at street level will enable water managers to develop reliable urban water strategies, including plans for flood prevention and pollution management.

URBAN PLUVIAL FLOOD MODELLING AND PREDICTION – New methodologies, the associated software tools and application guidelines will be developed and tested for short term, fine scale pluvial flood forecasting. With these new techniques it will be possible to forecast pluvial flooding a few hours before it takes place, which is not currently possible. This will enable triggering structural and non structural actions on time and to minimise the negative effects that pluvial flooding can have on people and critical infrastructure.

IMPLEMENTATION OF FINE-SCALE RAINFALL DATA, FLOOD MODELLING AND PREDICTION INTO URBAN WATER MANAGEMENT – Detailed rainfall data and flood model results acquired by RAINGAIN will be used to analyse the urban water systems at the pilot locations and to develop solutions for better stormwater control and flood prevention. While classical rainfall data from rain gauges are unable to capture rainfall variations within a city area, new detailed information on peak rainfall and local flooding will be used by water managers to see how their water system react to local, critical rainfall and to develop new solutions.

Rain Gain
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SHORT COURSE: Handling of spatial data and connection of external algorithms to the DELFT-FEWS platform
Prepared by Susana Ochoa-Rodriguez February 2013