



Participatory HealthGIS

OSGEO/CGS Open Source Geospatial Lab initiative

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The Centre for Geospatial Science (CGS)

Established November 2005 as a cross-faculty post-graduate research centre

Research focus:

Spatial Data Infrastructures (SDI)

Geospatial Intelligence (GI or GEOINT)

Interoperability and Standards

Location Based Services (LBS)

Semantics, Reasoning and Cognition





project team

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key points:

- Re-use of data
- Re-use of software
- Public Participation
- Dynamic surveying engine
- Interoperability
- Web 2.5 / Web 2+
- Privacy
- Real-Time pre-diagnostic





background:

- ❑ Ubiquitous computing dramatic growth
- ❑ Built-in GPS in almost all smartphones and tablets
- ❑ Hardware and Internet broadband stays cheaper and more available
- ❑ Two-way communication affordable “for everyone”
- ❑ Interoperability (open standards)
- ❑ It opens possibility of intelligent, dynamically assessed surveying - Conrad Wolfram has argued that Web 3.0 is where "the computer is generating new information", rather than humans.



online / mobile Health surveys vs paper surveys

UK / smart phone / privacy / risk mapping / healthcare management (when)

quality of Life, symptoms checker

Headache Impact Test™

1. When you have headaches, how often is the pain?

- Never
- Rarely
- Sometimes
- Very often
- Always

YOUR SCORE: 58

REPORT DATE: April 15, 2011

DOCTOR DIAGNOSIS: Unknown

SELF DIAGNOSIS: Unknown

HEADACHE FREQUENCY: 1-2 headaches per week

CURRENT TREATMENT: Unknown

HEADACHE IMPACT TEST™

30 40 50 60 70

LOWEST HIGHEST

NHS Direct - Before we begin

For health advice and reassurance, 24 hours a day, 365 days a year.

0845 4647

Home | Check your symptoms | About NHS Direct | For members | For commissioners | News | Decision aid

Diarrhoea and vomiting

1 Introduction > 2 Who is the checker for? > 3 Symptom questions > 4 Results

Before we begin

Most people will experience diarrhoea and/or vomiting from time to time. It's very common and can have many different causes.

Age range

Advice given is suitable for adults and children aged 5 years and over. If your enquiry is for a child under the age of 5, visit our diarrhoea and vomiting symptom checker for babies and younger children.

If you have diarrhoea and/or vomiting

▶ Start the symptom checker

Please note, this service is provided for people in England only. For

Diarrhoea and vomiting

1 Introduction >

Contact your GP straight away

Your answers suggest you need to see or speak to your GP straight away. If your symptoms are severe, contact your GP straight away.

Speak to your GP

Your answers suggest you need to speak with your GP or contact the emergency doctor.

Survey or service?



why dynamic?

❑ dynamic surveying knowledge server, with a spatial database, holds remotely layers of information related to a particular survey, guiding and supporting in-field surveyors with up to date or even live data



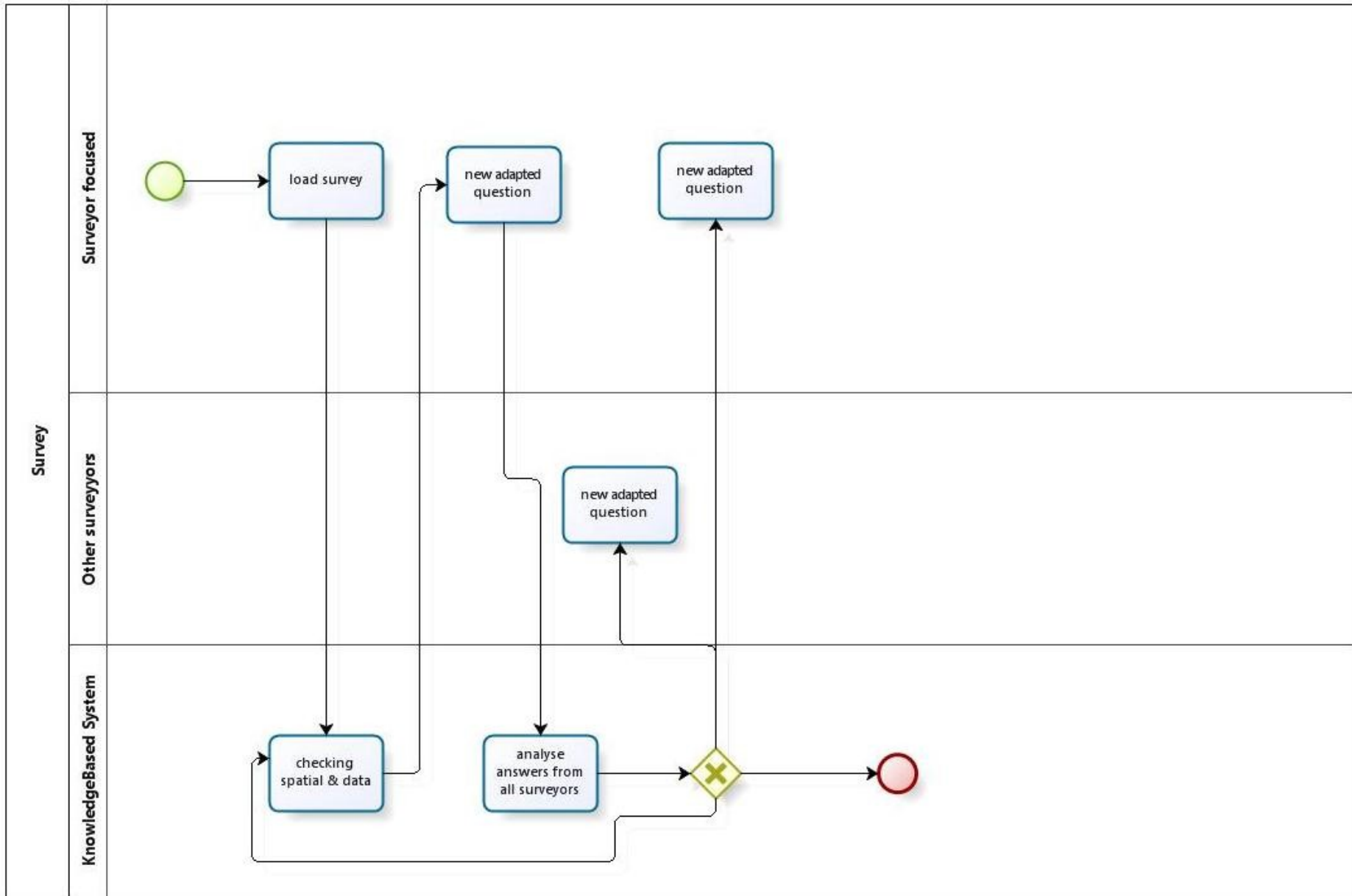


why dynamic (2)?

❑ AUTOMATED: real-time noise reduction (plenty of answers and we use data which fits into median only – e.g. when a user commits “strange” data, system asks: “are you sure?”)

❑ HUMAN BASED: real-time adjusted sampling – if system decided we have enough data, or accurate enough, user is sent to another part of the survey or to another localization







Why dynamic (3)?

- ❑ future research: adaptation of dynamic data feeds, based on e.g. Twitter or RSS channels





Our solution:

- Only open source
- Only open standards (W3C, OGC)
- Ubiquitous device as standard as they left their factory, no software needs to be installed, everything is available on the web browser
- Adaptive driven system
- Web 2.5 / Web 2+ ;-)



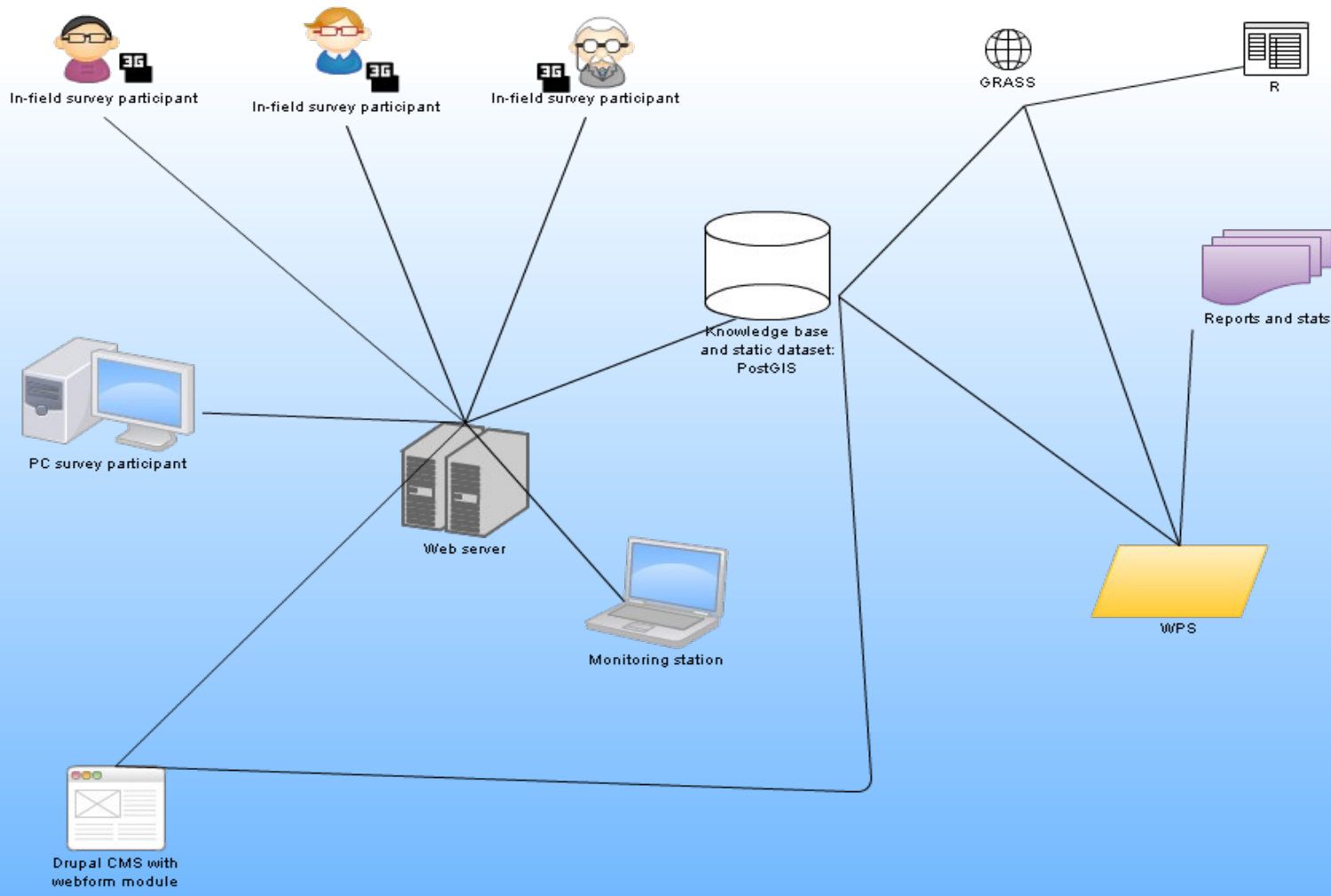


technicalities:

- Linux + linux-vserver paravirtualization
- MySQL (or Postgres)
- Openlayers
- PHP

- Drupal CMS
- Geoserver (serves WMS layers and other geodata)

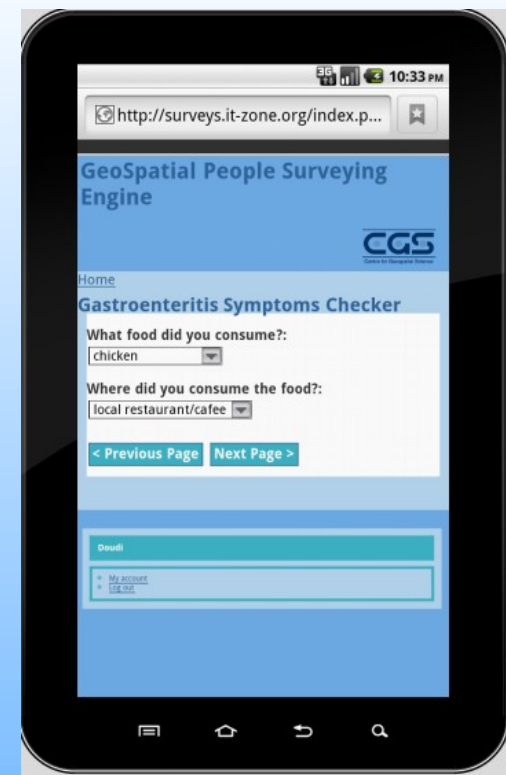
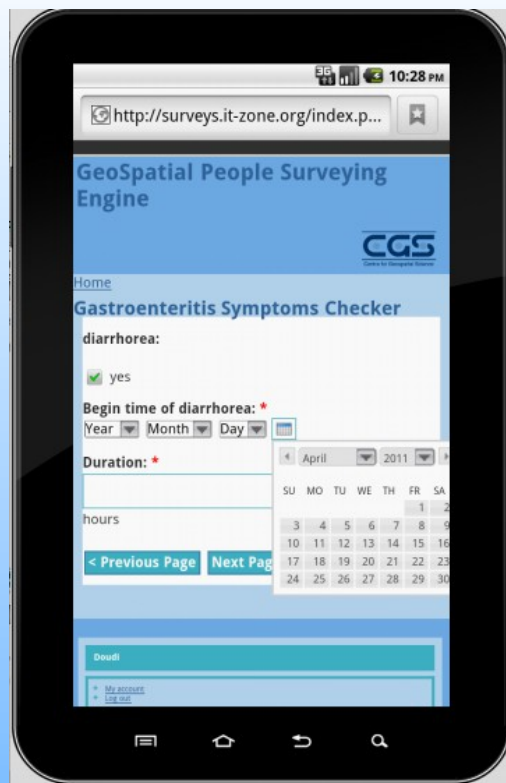






“Health” use case

- ❑ Gastrointestinal illness application case study
- ❑ <http://surveys.it-zone.org/>





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Thank You



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