



COMPUTER SCIENCE CENTRE AND FREE SOFTWARE

SIMMC - An Integrated Monitoring System for Brazilian Digital Inclusion Projects

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SIMMC

Integrated **M**onitoring **S**ystem for the **M**inistry of **C**ommunications

The screenshot shows the top section of the SIMMC website. At the top, there is a navigation bar with the Brazilian flag and 'BRASIL', a link to 'Acesso à informação', and several menu items: 'Participe', 'Serviços', 'Legislação', and 'Canais'. Below this, there is a link to 'Pular para o conteúdo' and 'Acesso Restrito'. The main heading is 'Sistema Integrado de Monitoramento Ministério das Comunicações'. To the right of the heading is a search bar labeled 'Busca rápida' with a magnifying glass icon. Below the heading is a row of icons representing various communication services: a bar chart, a telephone, an email icon, a globe, a smartphone, a microphone, a Wi-Fi symbol, a television, and a pie chart. Below these icons are three large blue buttons: 'Gráficos' (with a bar chart icon), 'Relatórios', and 'Mapas'.

Você está em: Início / Gráficos

Clique no logo para ir até a sua página de monitoramento:



SIMMC

Integrated **M**onitoring **S**ystem for the **M**inistry of **C**ommunications

Monitoring and Evaluation (M&E)* system that helps to track progress and demonstrate the impact of the projects.

- Provides monitoring and indicators;
- Assists management and promote accountability of public spending (public transparency).

* P. Crawford and P. Bryce. Project monitoring and evaluation: a method for enhancing the efficiency and effectiveness of aid project implementation. International journal of project management, 21(5):363-373, 2003.

Before SIMMC

Workflow:

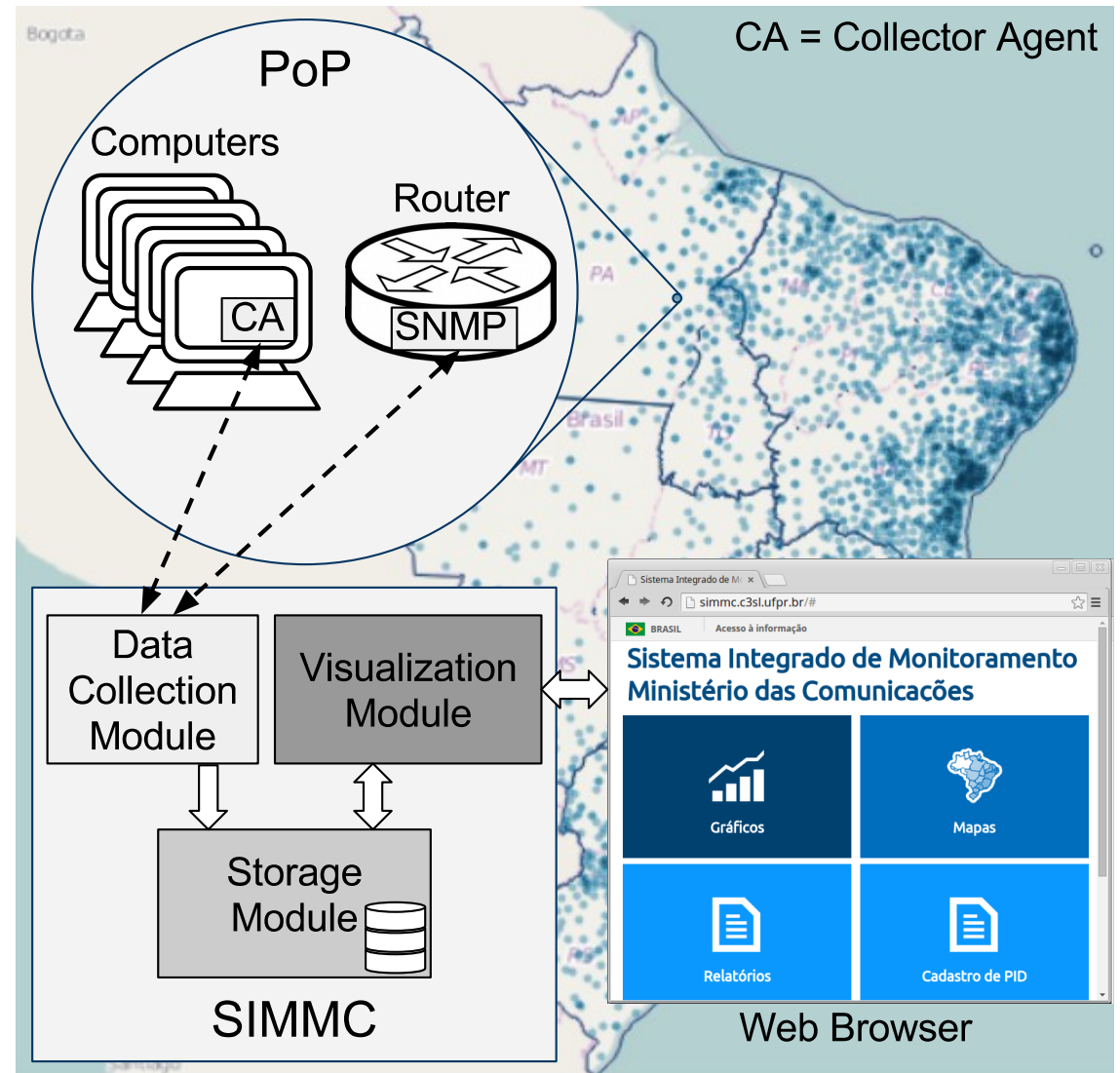
1. Sample some *Points of Presence* (telecenter, gesac router, digital city building);
2. Send a government official to the localities;
3. Verify condition and use of the devices;
4. Write a report about it.



SIMMC

Numbers:

8,000 Points of Presence spread over 2,500 cities, generating around 1 million records/day.



SIMMC - Information acquired

- **Machine inventory (HD, memory, processor, OS);**
- **Network usage (bytes and packets in and out);**

SIMMC - Information acquired

From **machine inventory (HD, memory, processor, OS)**, we can detect:

- Preference for Operating System (evaluate acceptance of our solution);
- Average time for security updates to be installed.
- Find out where old computers are to replace them (logistics);
- Changes in inventory through time (theft?).

Telecentro Pró-Vida				
MAC Address - 00:1d:92:78:b0:25				
25/04/14	Linux Educacional 5.0 mc	Intel(R) Celeron(R) CPU 430 @ 1.80GHz	1.96 GiB	74 GB
16/03/16	Linux Educacional 5.0 mc	Intel(R) Celeron(R) CPU 430 @ 1.80GHz	487.29 MiB	74 GB

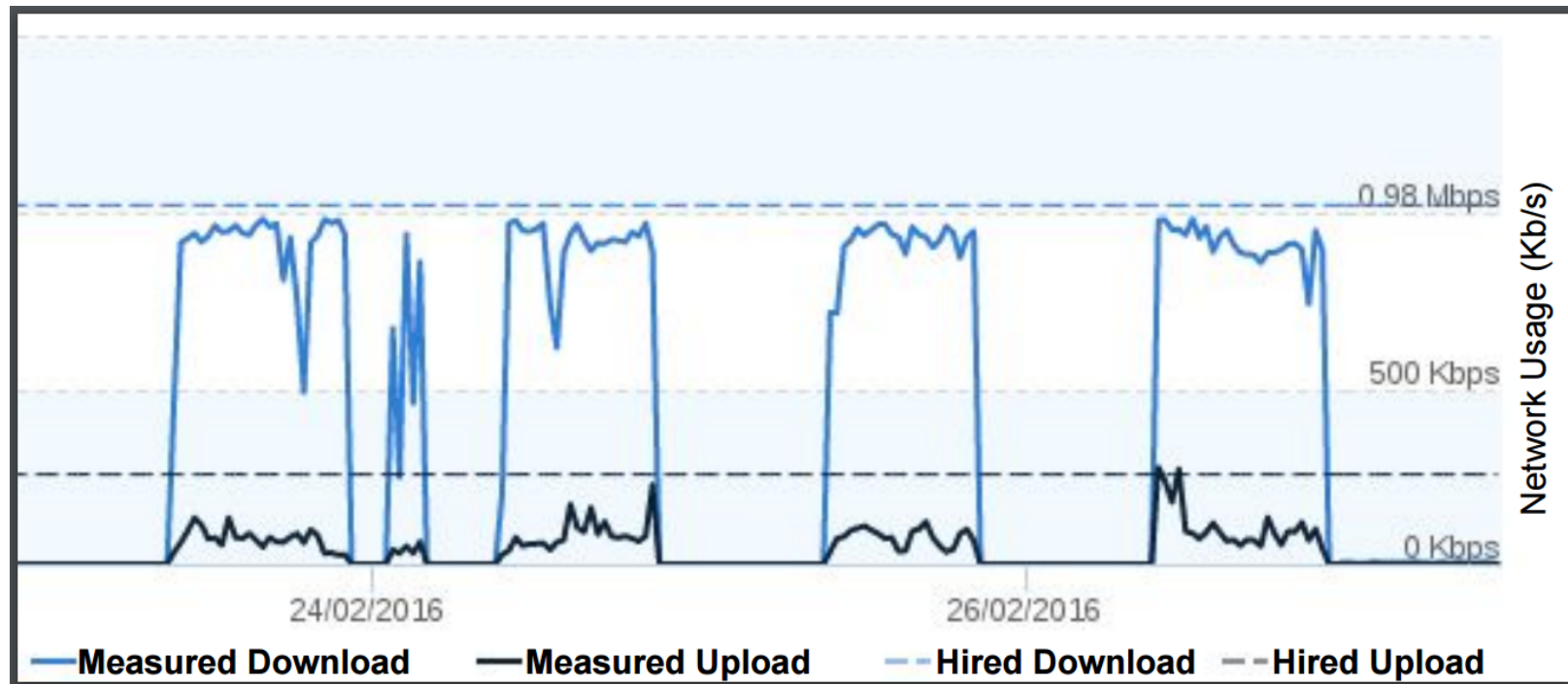
SIMMC - Information acquired

From **network usage** we can:

- Identify system availability.
- Program expansion and maintenance:
 - Find out underused connections and turn it off;
 - Identify if a bandwidth upgrade is necessary.
- Defrauding:
 - When hired bandwidth doesn't match usage peaks.

SIMMC - Information acquired

From **network usage** we can:



SIMMC - Information acquired

From **machine inventory** and **network usage**:

- Generate alerts when some threshold is reached;
- Plan the expansion of the projects by defining metrics;
 - For instance, rewarding points of presence with more than **80% of availability, 60% of working computers** and using more than **50% of the available internet bandwidth**.

Conclusion

M&E systems enable governments to:

- Save money;
- Improve efficiency;
- Promote public transparency (open data).



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