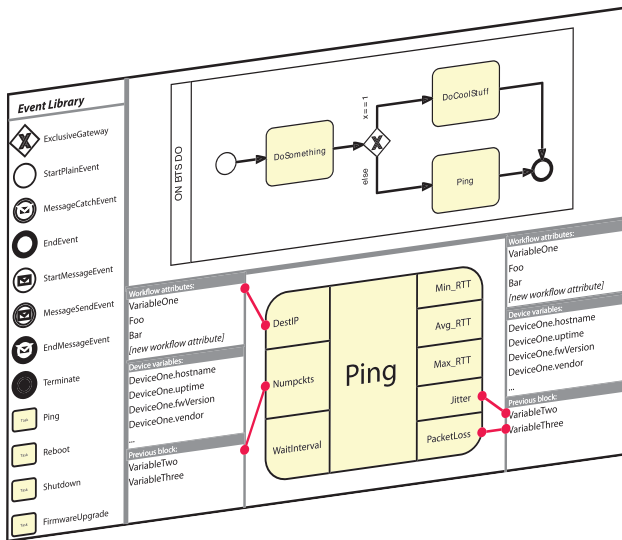# the**stix**manifesto:

Stix is a novel network management system especially designed for Broadband Wireless Access (BWA).
From local community deployments to larger Telco, it aims to redefine the network lifecycle.

Goal-oriented management

A network administrator shouldn t be a programmer in disguise. **Stix** introduces Network Process Modelling Notation (NPMN), a visual paradigm that enables the operator to specify from a higher perspective how the network should perform. NPMN is a simplified version of well established event-based workflow notations. It is straightforward to learn but yet powerful and effective.

Infrastructureless, limitless.

Stix moves the intelligence from the datacenter out to the field. It requires minimal IT infrastructure: a tiny low-power dongle is deployed at each remote site, such as on transmission towers. The architecture doesn t rely on always-on central servers and can scale up to nationwide networks. This means that community networks don t need a NOC to operate, while ISPs are relieved from having yet another appliance server running.

A holistic view

Running a business takes more than running a network. **Stix** is designed to embrace every aspect of the BWA operations beyond networking, and it integrates with the existing accounting and billing systems. Realtime reporting is done with a flexible wiki-like interface. NPMN can be dynamically expanded by developing new features, or importing from 3rd parties.

Total hardware control

No matter how far or inaccessible a device is, the operator needs eyes and hands access to it. Critical operations, such as remote firmware upgrades, can be carried out with confidence: **Stix** provide realtime energy monitoring, access on the serial console, and power control (e.g., reboot, poweroff) on any device connected via a cheap universal hardware adapter. An invaluable tool during emergency procedures.

Vendor Independence

Networks need freedom to grow.
Freedom is to be able to decide for the most appropriate hardware, it s avoid being locked in a single technology or a on single vendor. **Stix** features a built-in hardware abstraction layer that allows the support of virtually any manageable hardware: communication equipment, switches, routers, firewalls, UPS, etc...

Free as in freedom

Stix is an open project, documentation and source code are available at *http://www.wimo.inf.ed.ac.uk/stix*

Giacomo Bernardi
Wireless and Mobile Group
Edinburgh University

School of **informatics**