

- ■ ■ Technology for Tailored Healthcare

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■ ■ ■ Structure

- The technology in the modern home
- Co-ordinating in-home elements
- What happens when we co-ordinate?
- What technology support do we need?
- Question:How can we make this real?

Technology in the modern home



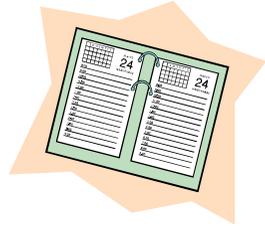
■ ■ ■ ...co-ordinating in-home elements



Wakeup service



Yes, Dave?



8:30 AM staff meeting



One hour drive



30 minutes to shower



30 minutes for breakfast

= 6:30 AM



5:50 AM !!



Snow +10 minutes



Accident +20 minutes



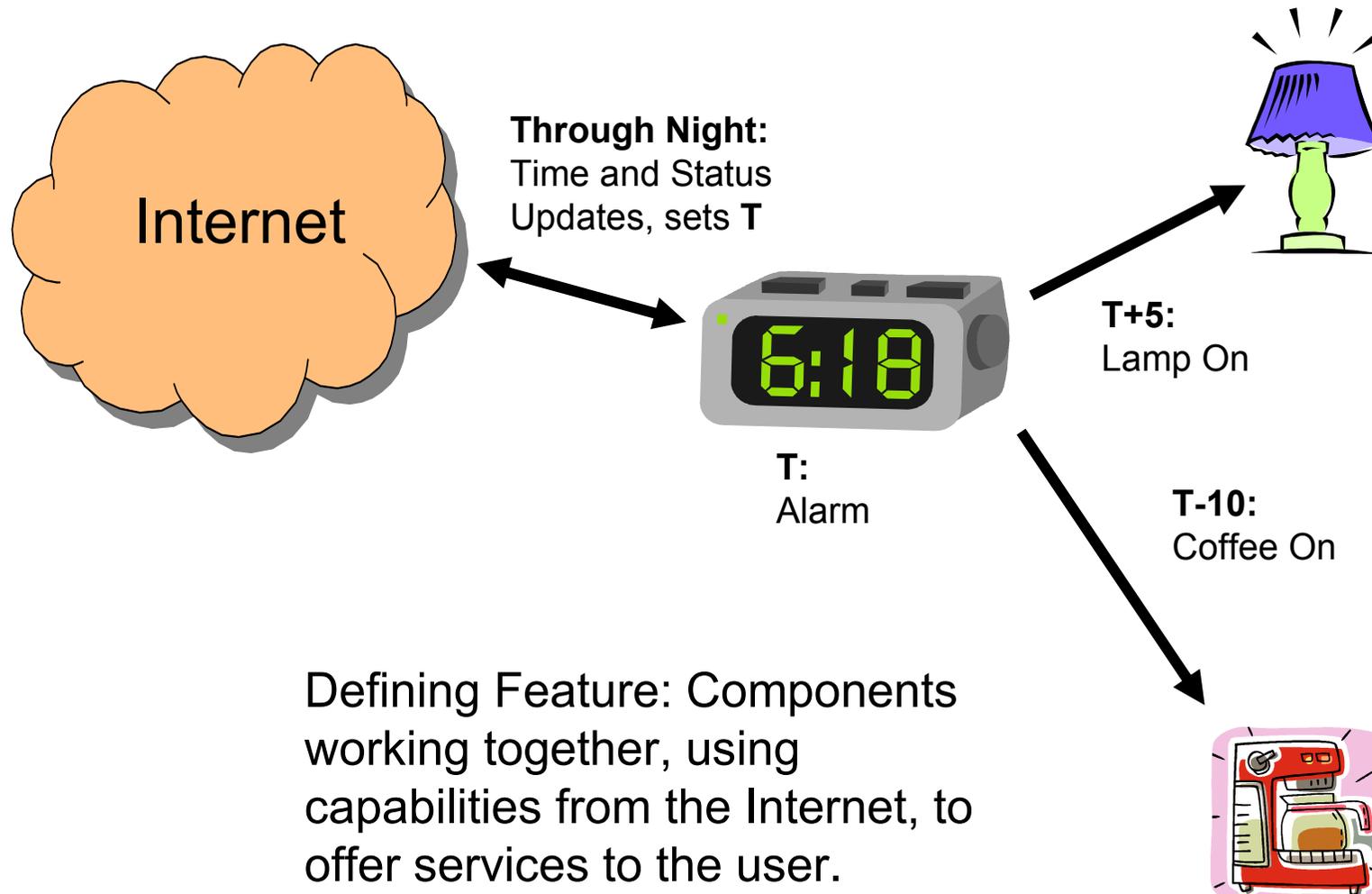
Talked to your car...



It needs gas! +10 minutes



The Alarm is not Alone...



Defining Feature: Components working together, using capabilities from the Internet, to offer services to the user.

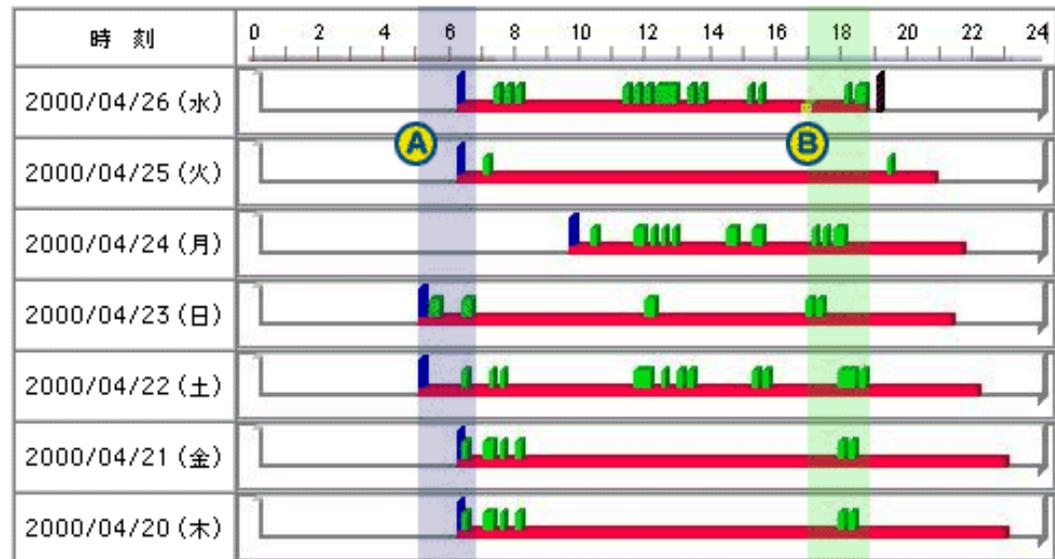
- ■ ■ ..what happens when we co-ordinate devices for health and care purposes?

iPot - Internet Appliance



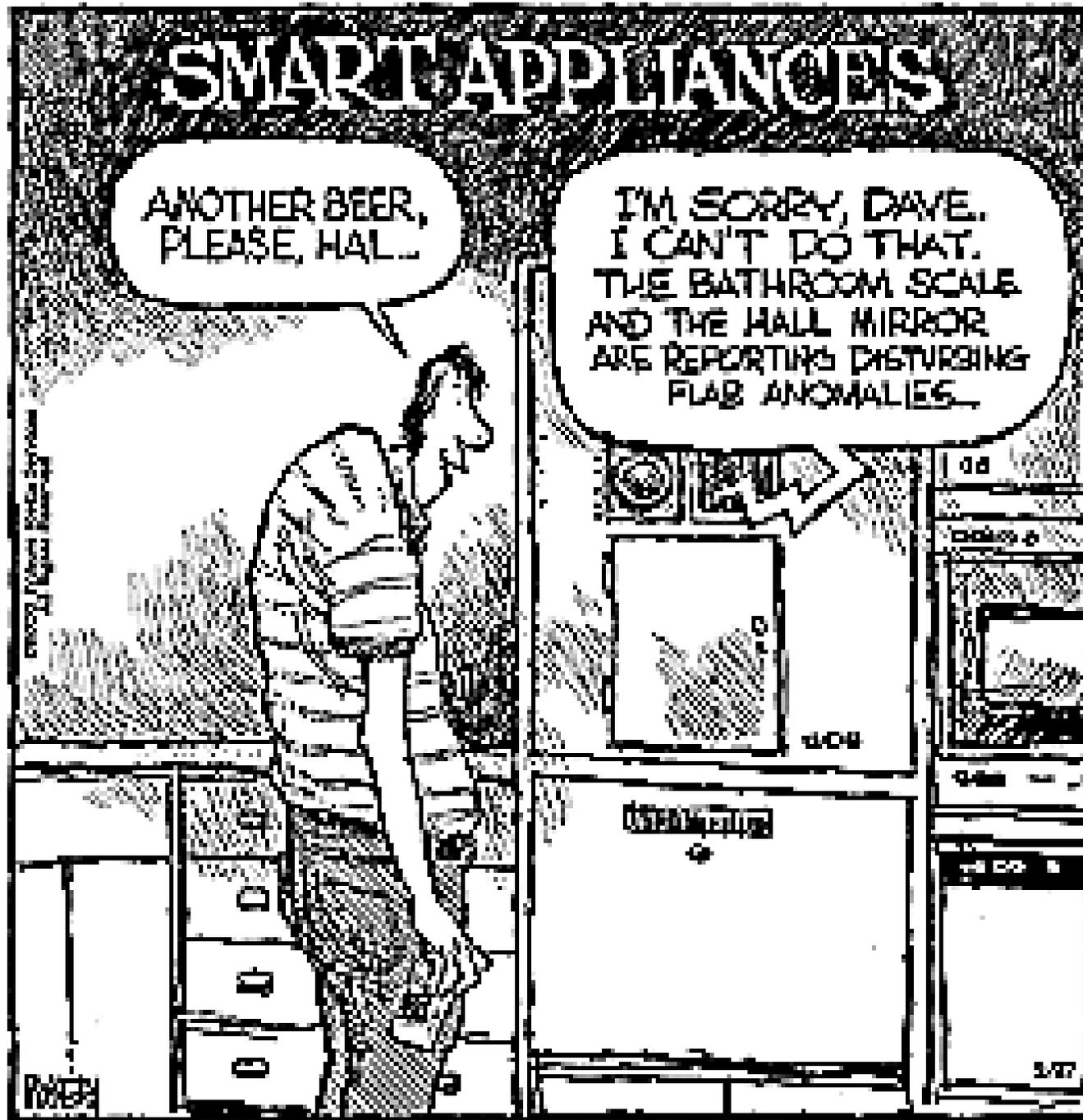
○部分をクリックすると
拡大写真をご覧いただけます。

過去一週間の使用状況グラフ (10分単位で表示しています。)



現時点 電源 (電源を入れる) 給湯 保温中 通信状態が悪い時

※が頻りに表示される場合は、iポットの位置を変更してください。
※一度給湯された後10分以内に再度給湯されても給湯データは一つとして表示します。



■ ■ ■ What could we do??

- Non-invasive monitoring
- Danger scenario avoidance/mitigation
- Guidance and active process support
- Teaching aids

...in short, if we can use a program to **manipulate** a device, we can offer services via it

- ■ ■ ..what technology support do we need?

■ ■ ■ Core demands

- Each user will be different; We need to be able to configure the capabilities per user, per scenario
- Users will be mobile; Needs to be applicable across multiple domains (home, automobile, personal)
- Things will break; We need applications to work even in the presence of failures (network, home, equipment...)
- It needs to constantly available; We need to be able to perform upgrades and changes without 'reboots' or downtime
- It shouldn't take over; Users shouldn't need to be aware the system is there, or working on their behalf
- It needs to be safe, and private; We need **very strong and reliable** security with tight privacy guarantees

■ ■ Suitable Technology : OSGi

OSGi enables the delivery and management of services that can be accessed by devices that may be remote and/or have intermittent network connectivity. It defines a framework providing the capabilities required for these dynamic environments including a simple deployment model, remote management, and lifecycle management, amongst others.

■ ■ ■ What is it?

- An extensible integration platform based upon an open, common architecture
- Used to remotely and dynamically deploy, provision, maintain, and manage applications and services
- Intended for devices in networked environments, such as homes, enterprises, vehicles, mobile handhelds, and industrial settings

■ ■ ■ What does it do?

- Enables an entirely new category of smart devices with flexible and managed deployment of services
- Provides an open, common architecture for service providers, developers, software vendors, gateway operators and equipment vendors to develop, deploy and manage services in a coordinated fashion

■ ■ Why the OSGi Service Platform?



- Incremental platform upgrades/extensions in mission critical “always on” situations
 - e.g. Residential or Industrial Gateway



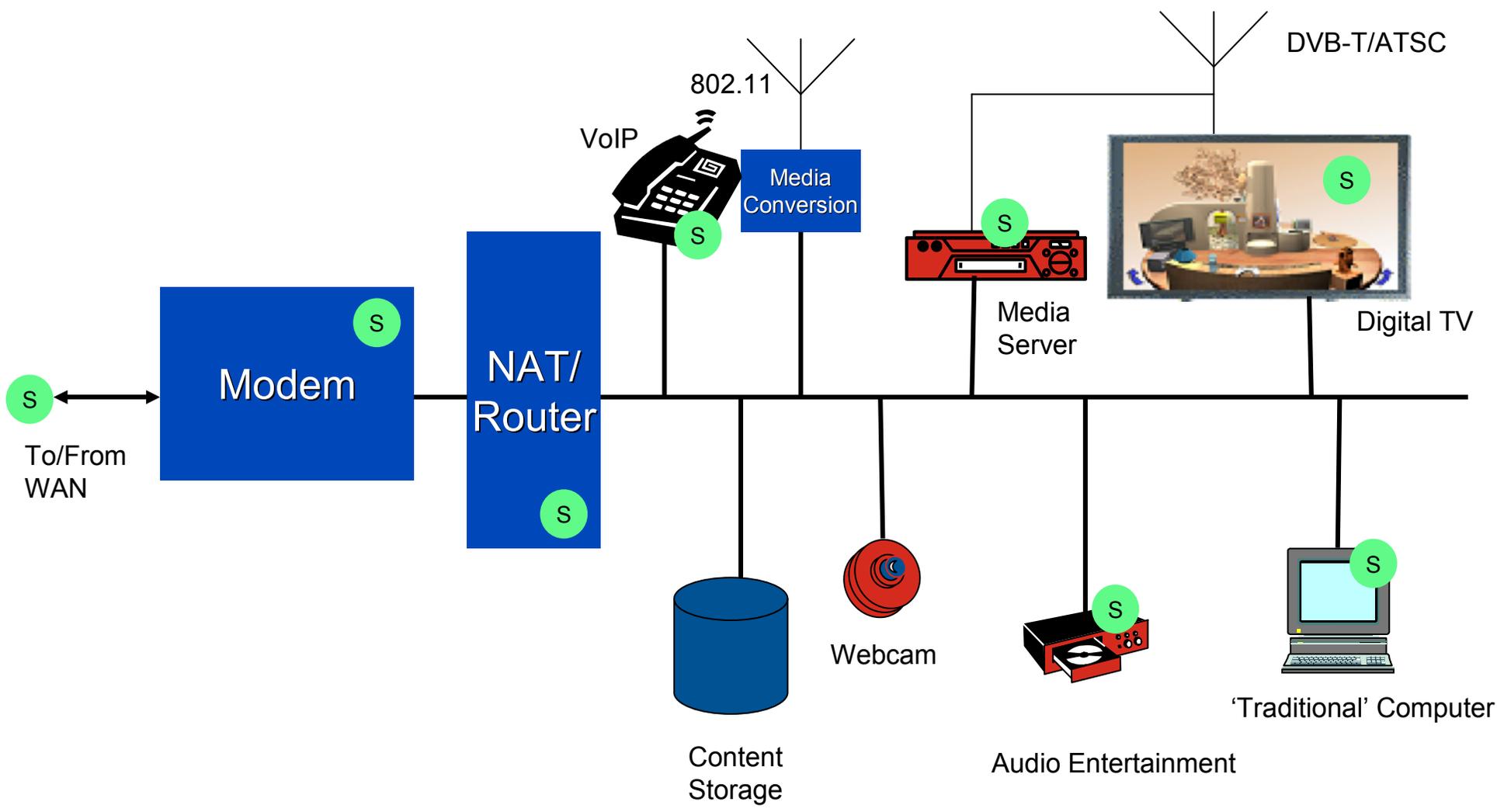
- Single device running disconnectable applications from multiple, independent sources
 - e.g. Mobile handset or PDA



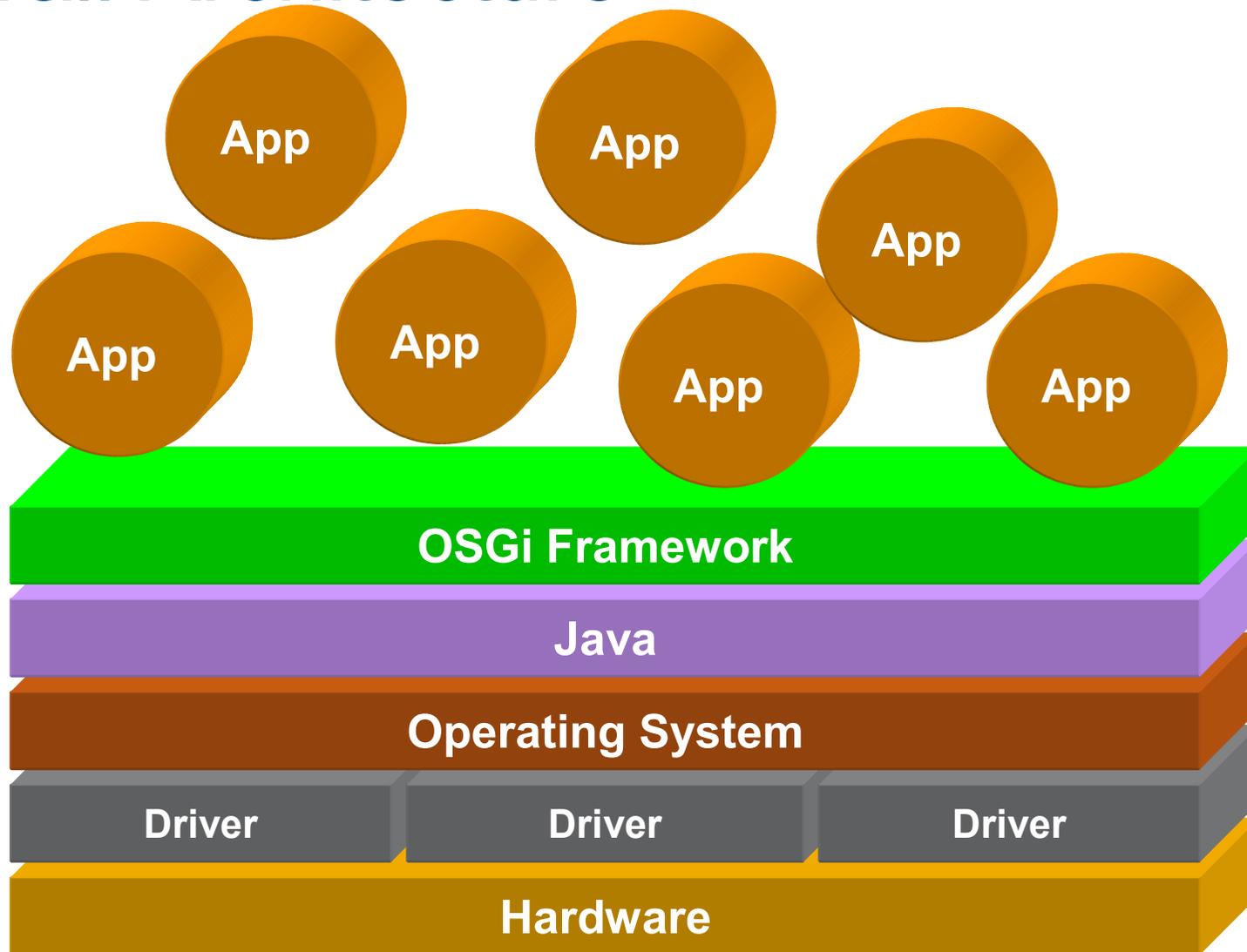
- Enable viable management systems for resource constrained devices
 - Both end user “pull” and management “push” for applications and services
 - e.g. Automotive telematics devices

Home Network

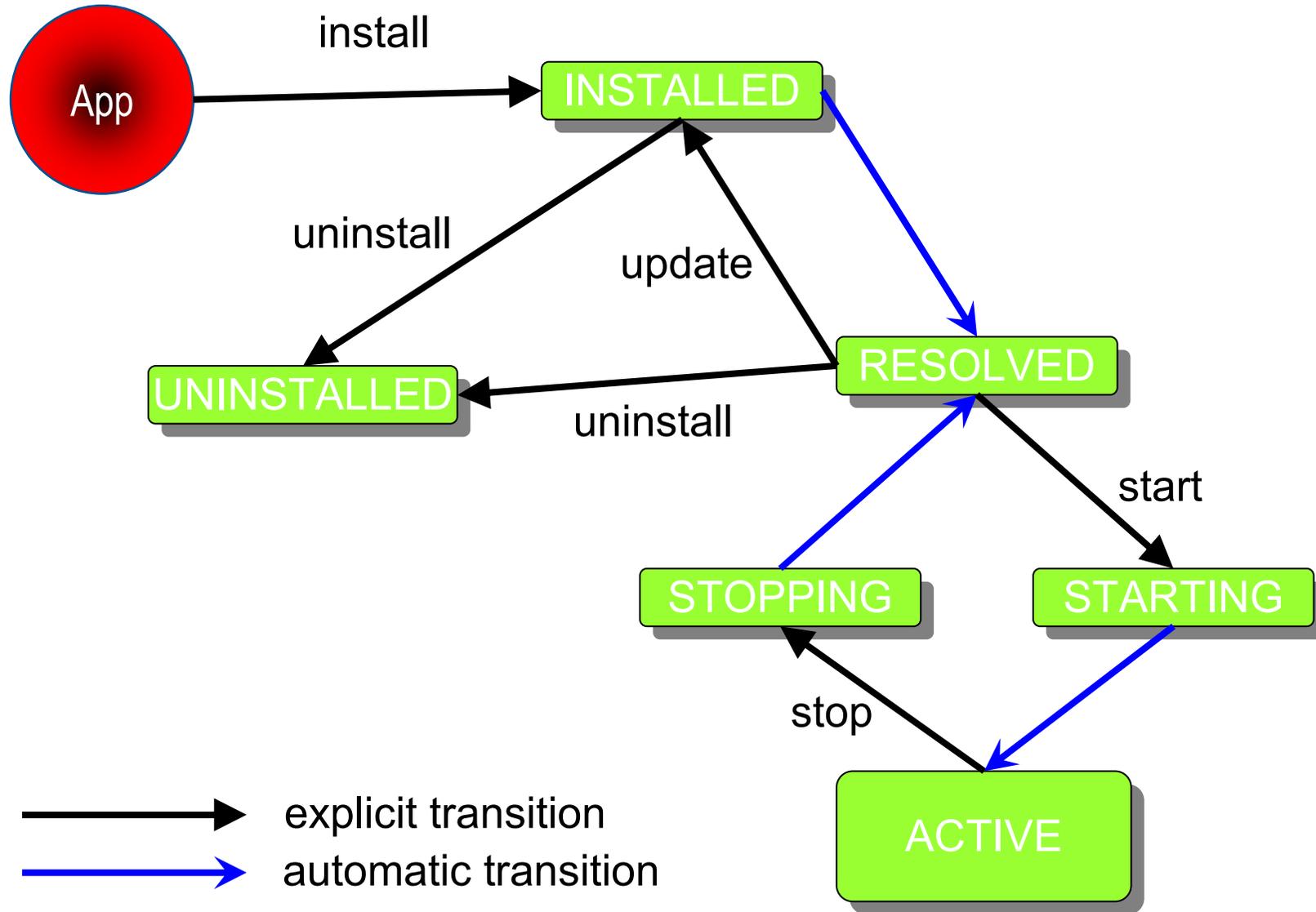
S - Potential Services Repository



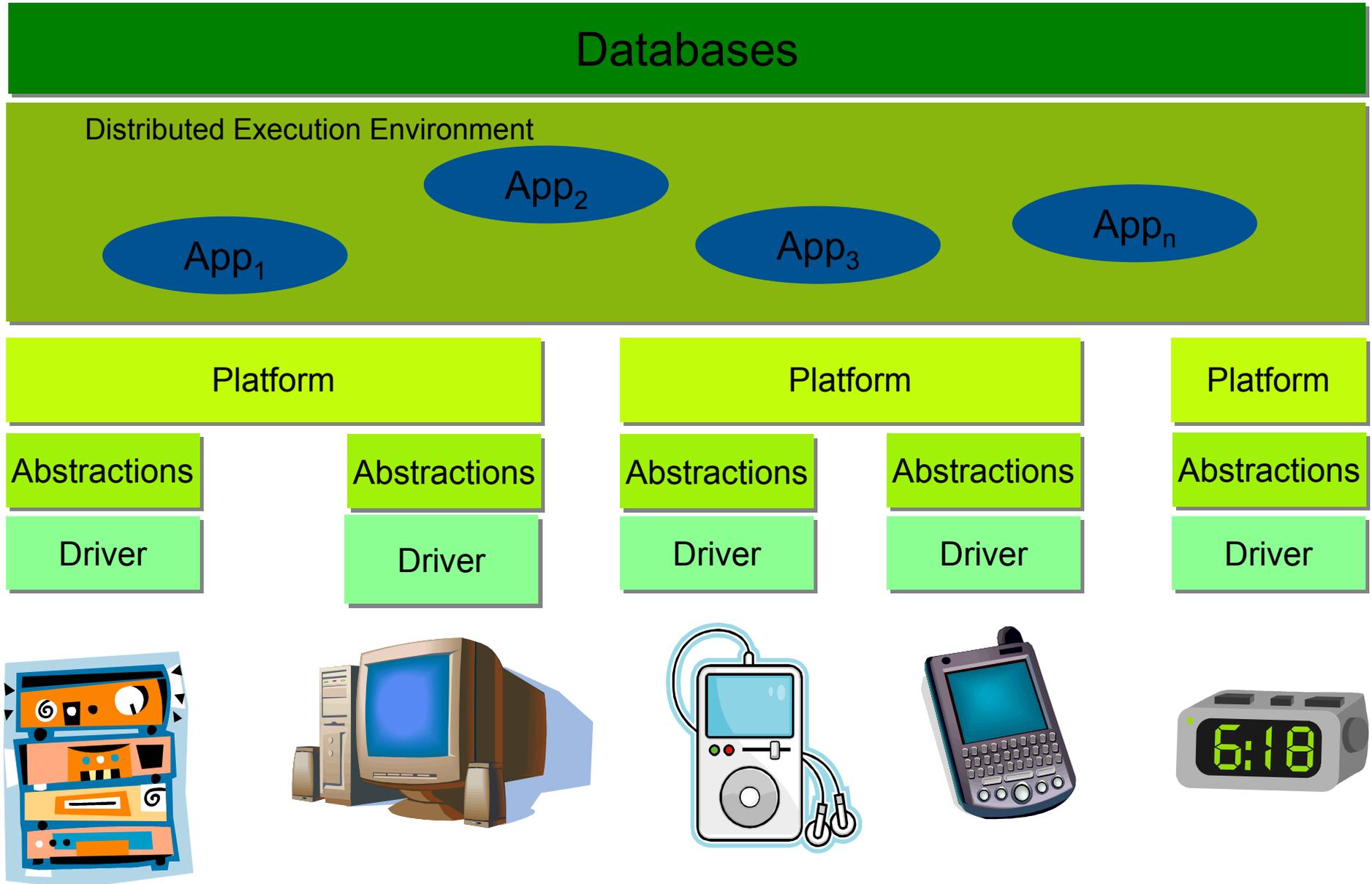
Overall Architecture



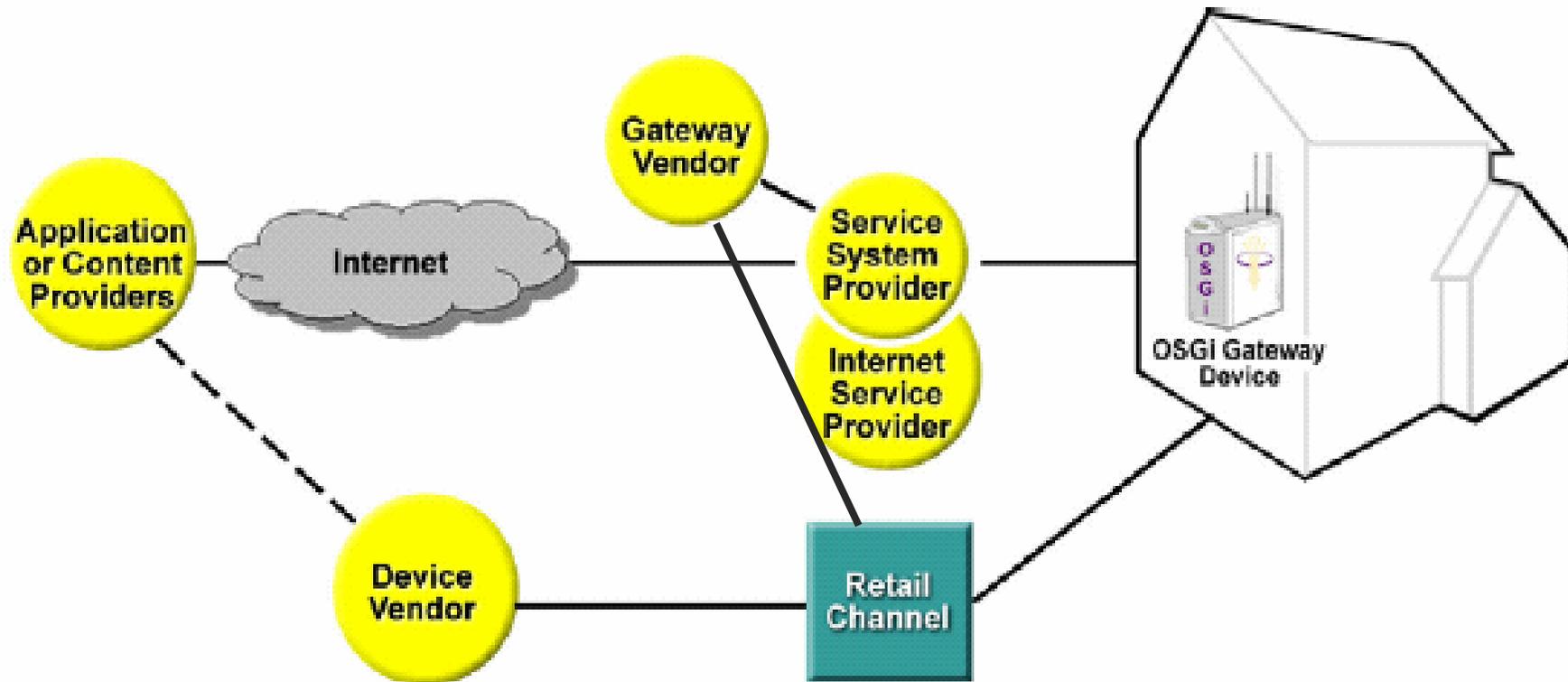
Application Lifecycle



A possible approach..

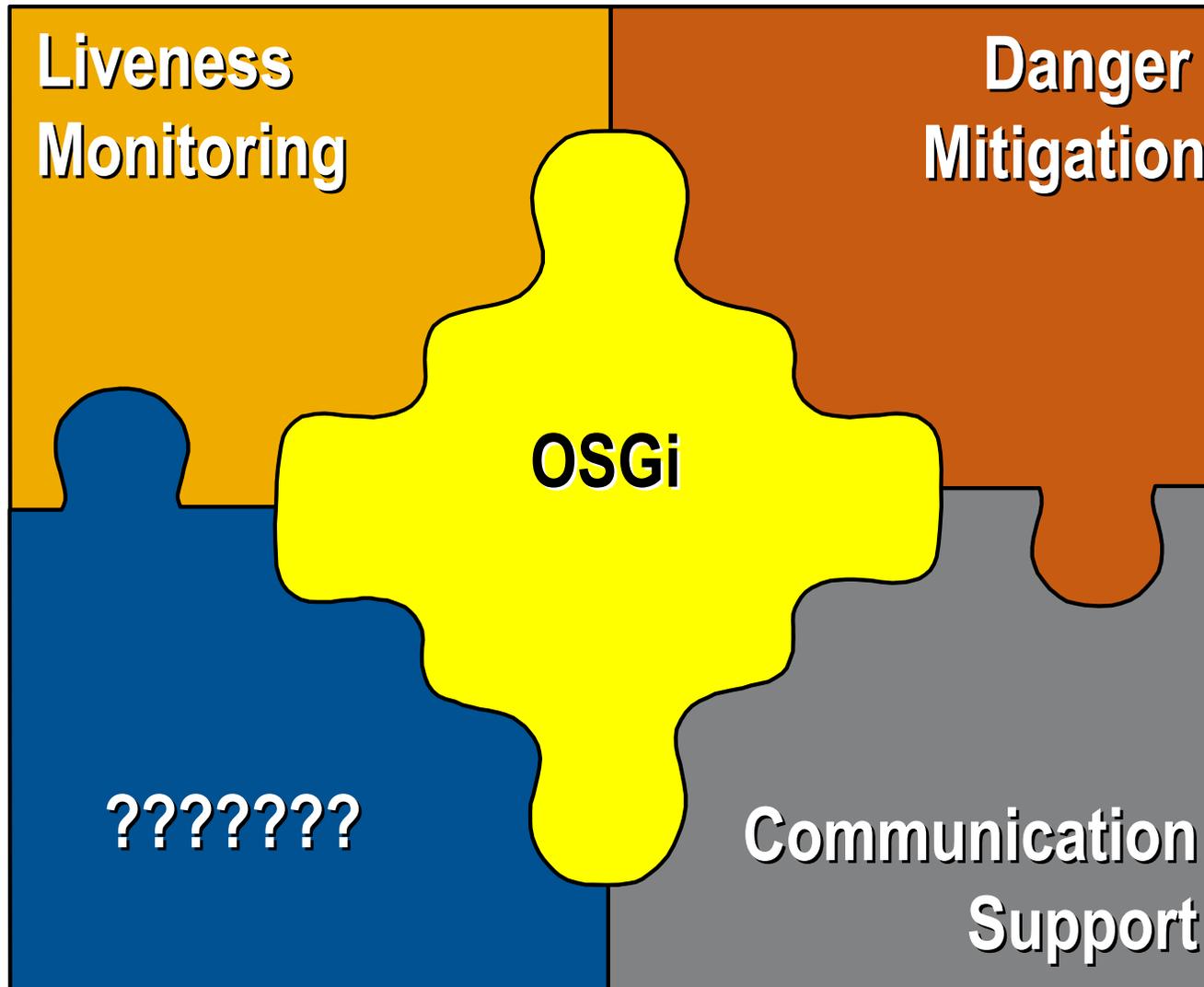


■ An OSGi deployment example



■ ■ ■ In short...

OSGi Enables tailored applications...



■ ■ ■ Thanks for listening.....

<http://www.osgi.org/>



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