ALLSEEN ALLIANCE

Technical Steering Meeting

September 2, 2014

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Reminder:

This call is being recorded

Agenda

1. Approve minutes from previous meeting
2. Move Core release date from 14.10 to 14.12 proposal
3. Analytics project proposal
4. Language bindings proposal

Move Core release date from 14.10 to 14.12 proposal

Proposal to move Core 14.10 to 14.12

- Move Core 14.10 release to 14.12
  - Support additional security investments needed to improve 14.06 code prior to the release of Security 2.0
    - These security investments will be included in the Security 2.0 release currently planned for 15.04

Security Investment Overview

- Router Nodes may allow communication between subnets
  - Problem: A router node on a dual-homed system will allow broadcast messages to “bleed over” from the original subnet into the adjacent subnet.
  - Mitigations: Update the router node to forward messages only to nodes that are on the same subnet as the message originator. (network isolation)

Security Investment Overview

- Message Headers are Unencrypted
  - Problem: The header packet contains information that could be pieced together to determine the user intent.
    - For example, the method call appears in the header, which is enough to expose the user to some attacks. Ex. If the method call is "TurnOffHomeAlarmSystem()", anything that can read the packet knows what the user is attempting to do.
  - Mitigations:
    - Method may be able to be moved into the encrypted portion of the message
    - Need to ensure the package can be routed properly without the method info available to the router.
    - Alternative: Should have an option to allow the app to encrypt communications between leaf and router and between router and router. May require router-to-router authentication.
  - NOTE: If AllJoyn were to implement TLS or IPSec, this work would not be necessary.

Security Investment Overview

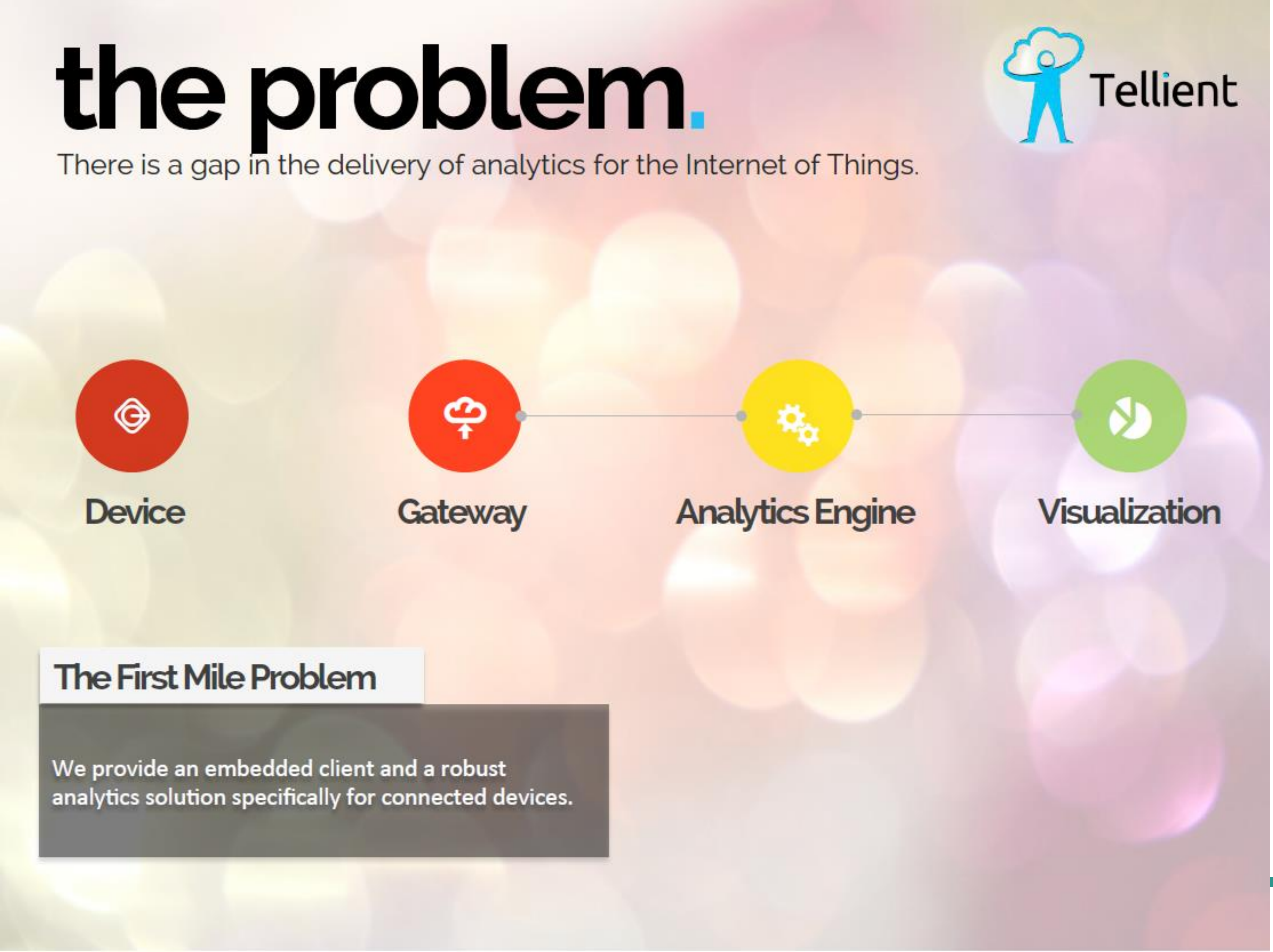
- Encryption and Authentication is Opt-In vs Opt-Out for Apps
  - Problem: Apps likely not to enable encryption by default and expose the user to attacks
  - Mitigations:
    - Protocol must provide a recommendation to use authentication and encryption.
    - Samples should be updated to demonstrate proper use of authentication and encryption
    - Windows implementations will default to authentication and encryption on

Security Investment Overview

- Problem: the About Service exposes a large amount of information about the device over multicast with no encryption or authentication before sharing.
  - Mitigations:
    - Advertise only the absolute minimum information required for discovery using About
      - Prior to authentication, About advertises only the session port.
      - After authentication, the caller can re-query About and get all device details
    - Alternative: Create new “Secure About” interface instead of changing behaviors of existing About interface
      - New interface would not be able to re-use the About interface name
      - AllSeen would have to remove the requirement to use the existing About interface
    - Alternative: Use mDNS to get the pre-session information then use About interface after authentication

Analytics Project Proposal

Tellient



the problem.

Tellient

There is a gap in the delivery of analytics for the Internet of Things.

Device
Gateway
Analytics Engine
Visualization

The First Mile Problem

We provide an embedded client and a robust analytics solution specifically for connected devices.

how it works.

Tellient

Distributed and connected analytics.

Embedded (AllJoyn)

The Tellient IoTA thin client integrates at the device OS (HLOS or RTOS) level and is extensible by device manufacturer.

Publish

Device analytics data is published to our cloud based system.

Enhance

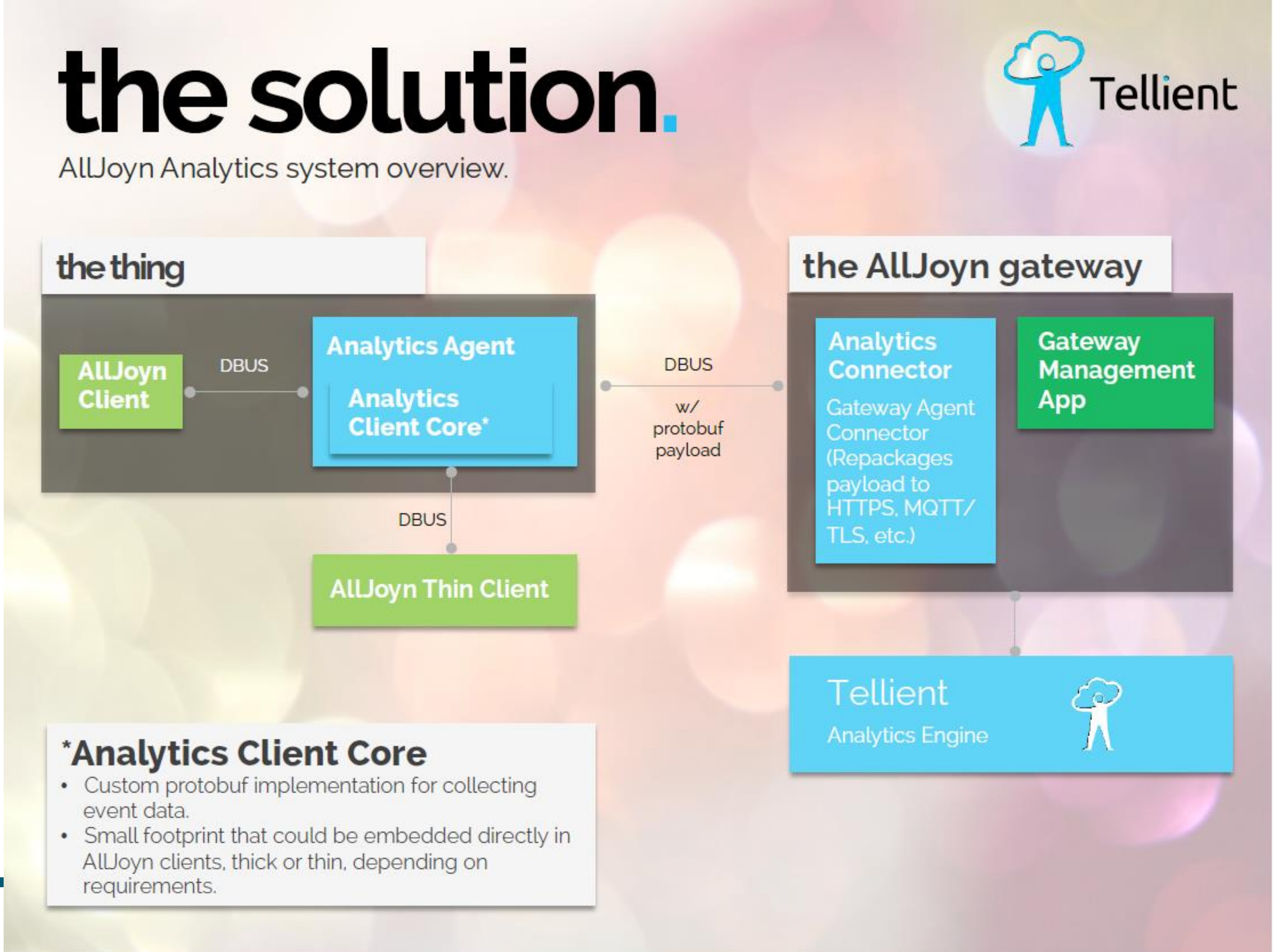
Data and metadata are combined with aggregated external data such as:

- Temperature
- Time
- Seismic data
- Traffic
- Other open data feeds

Distribute

The resulting output is real-time, actionable data usable by:

- Marketing
- R&D/Product
- Finance
- Customer service
- Supply chain management
- 3rd party systems & devices



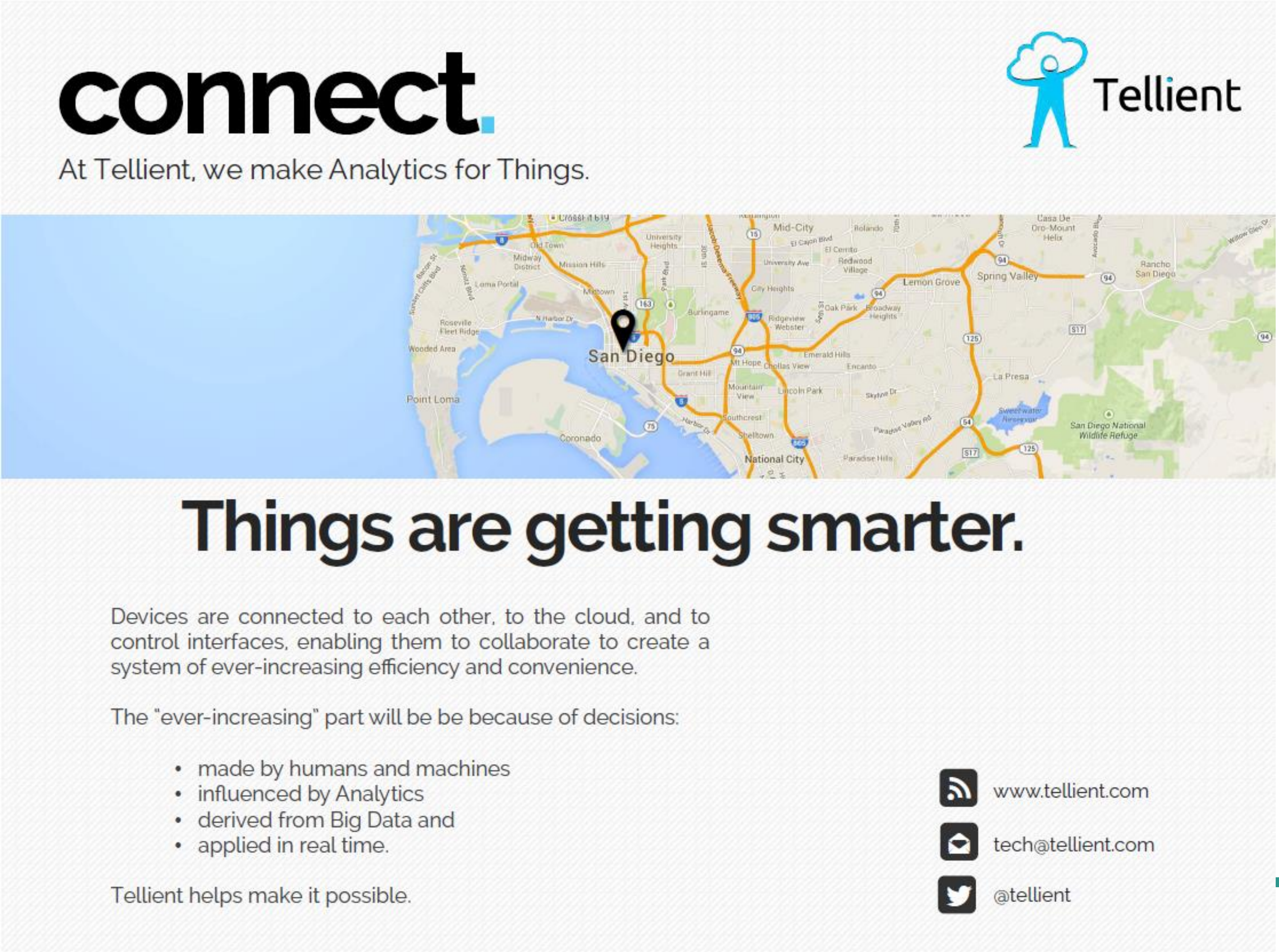
the solution.

Tellient

AllJoyn Analytics system overview.

*Analytics Client Core

- Custom protobuf implementation for collecting event data.
- Small footprint that could be embedded directly in AllJoyn clients, thick or thin, depending on requirements.



connect.

Tellient

At Tellient, we make Analytics for Things.

San Diego

Things are getting smarter.

Devices are connected to each other, to the cloud, and to control interfaces, enabling them to collaborate to create a system of ever-increasing efficiency and convenience.

The "ever-increasing" part will be be because of decisions:

- made by humans and machines
- influenced by Analytics
- derived from Big Data and
- applied in real time.

Tellient helps make it possible.

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Language bindings proposal

Fon

SWIG

- Unique wrapper code to create the bindings
- Several languages support
- Actively maintained
- Same interface across languages

Manual

- Bindings maintained manually
- Development must support each target language separately
- If needed, creates overhead for Working Groups

Thank You

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