

Request for Conversation (HotRFC) at IETF 105 • 2019-07-21

## AN INTERNET OF RULES

WHY & WHAT

WITH A REQUEST FOR CONVERSATION ABOUT

HOW

Joseph Potvin

Executive Director, Xalgorithms Foundation

LICENSES

Text & diagrams : CC-by v4.0

Software : Apache 2.0 & AGPL 3.0

# No Common Computational Standard has Emerged for Executable Modal Verbs

"MUST", "MUST NOT", "REQUIRED", "SHALL",  
"SHALL NOT", "SHOULD", "SHOULD NOT",  
"RECOMMENDED", "MAY", and "OPTIONAL"

rules

Money, Finance & Commerce  
Tax & International Trade  
Machine & IoT Control  
Intent-Based Networking

# PROBLEM: Wasteful Error-Prone Redundancy

## SOLUTION:

PUT-FIND-GET Simple Declarative Rules Online

Domain-Specific Language  
Domain-Optimized Search

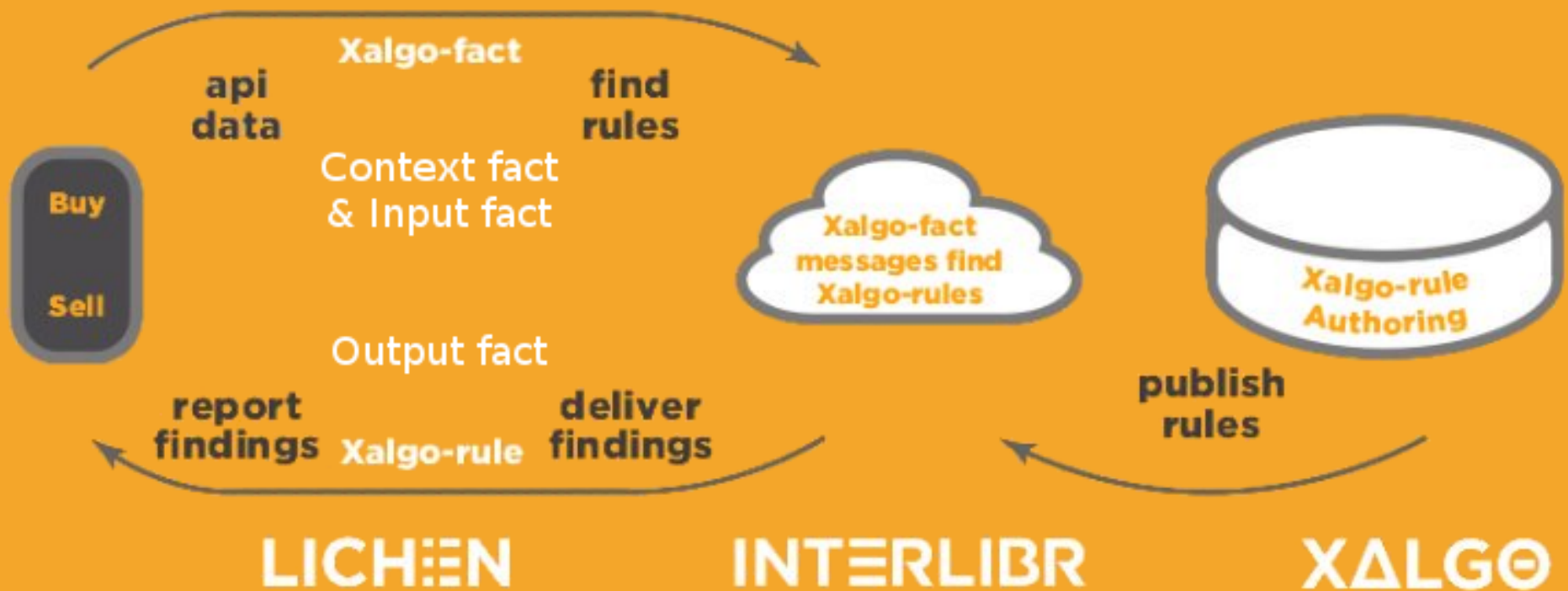
GIVEN **x is** WHEN **y is**      Certain Context Fact  
THEN **z ought to be**      Certain Input Fact  
                                 Hence Certain Output Fact

North, D. (2006). Introducing BDD (Behaviour-Driven Development). Updated from original version in: Better Software Magazine. March 2006. Retrieved from: <https://dannorth.net/introducing-bdd/>

Fowler, M. (2013). GivenWhenThen. Retrieved from : <https://martinfowler.com/bliki/GivenWhenThen.html>

# AN INTERNET OF RULES

## An “Internet of Rules”



# Domain Specific Language

Xalgo

JSON/CBOR tuples

Small number of reserved words

Existing standard schemas

Deliberately not Turing-Complete

# Domain-Specific Search

Interlibr

“IS”  
MESSAGES

find

“OUGHT”  
DOCUMENTS

## REQUEST

Xalgo-fact message  
key-value pair  
logged

1st FILTER: In Effect  
GIVEN jurisdiction and date/time

2nd FILTER: Applicable  
WHEN certain facts present

## RESPONSE

Xalgo-rule message  
data package  
logged

3rd FILTER: Does it work?  
THEN test rule & table lookups



## Tues 8:30 am Session Viger Room

Don Kelly  
karfai@gmail.com

Ryan Fleck  
Ryan.fleck@protonmail.com

Joseph Potvin  
jpotvin@xalgorithms.org  
+1-819-593-5983  
@xalgorithms

Craig Atkinson  
Craig.atkinson@lexmerca.com

Bill Olders  
wolders@xalgorithms.org

Alpha Testing Now

<https://github.com/Xalgorithms>

Video Demo: <https://tinyurl.com/yym4pgwd>