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# IREF: Interoperable Residential Energy Flexibility

2nd OpenADR User Conference, London, 19/11/24

# IDSR1: Interoperable Demand Side Response Call 1



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# IDSR1

Funded by UK Department for Energy Security and Net Zero (DESNZ) as part of the Net Zero Innovation Portfolio (NZIP)

Technical specification – PAS1878: aimed at increasing interoperability of Demand-Side Response solution

Standardization, for lack of a better term, is good

Centrica's IDSR1 project: IREF

- Interoperable Residential Energy Flexibility
- Implementing PAS1878
- Evaluate a PAS-compliant system

# IREF consortium

- Centrica – DSRSP and CEM developers
  - i.e., Demand-Side Response Service Provider, Customer Energy Manager
- Glen Dimplex, Mixergy – ESA manufacturers (in use)
  - i.e., Energy Smart Appliance

GlenDimplex mixergy®



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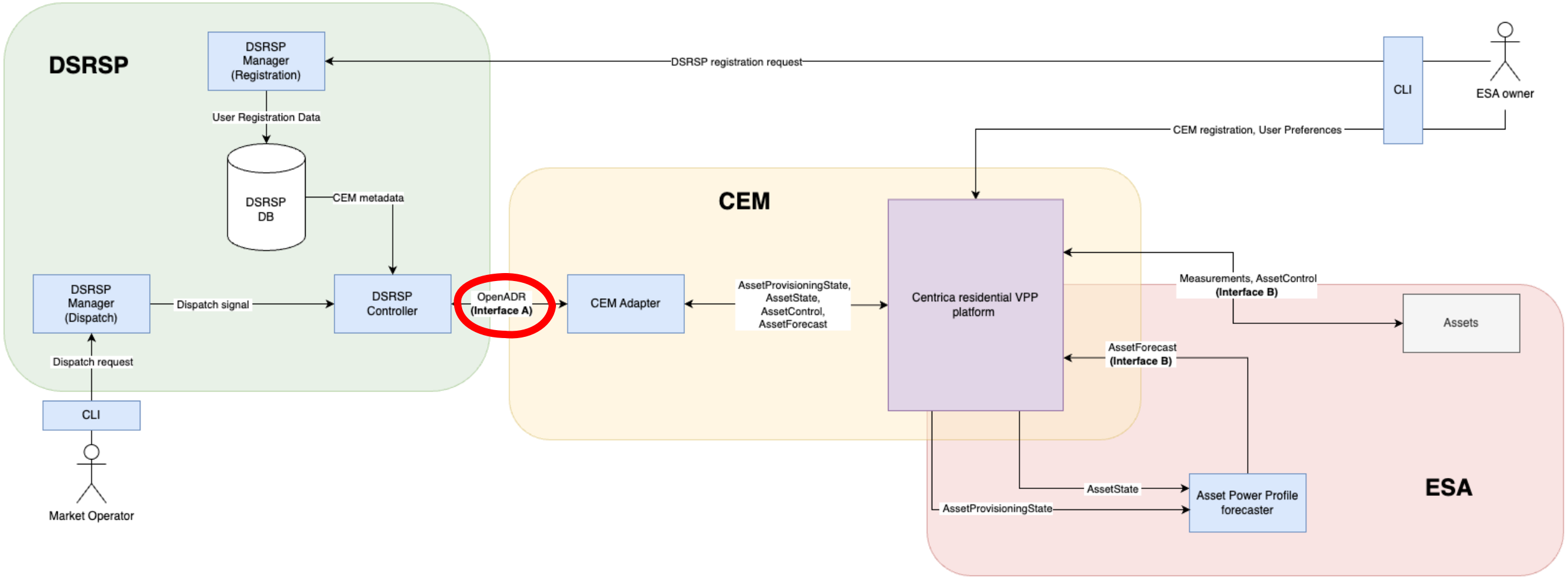
# PAS/IREF structure



# Development and testing

Multiple testing partners each with multiple development partners aiming at interoperability

Comprehensive testing with multiple partners

The testing partners should be able to switch between multiple providers

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### Development

- Design and development of the services
- Infrastructure
- Internal testing

## ENGAGE

### Lot 1

- Virtual Test Use Cases
- Compliance testing
- Registration, baseline operation

## Resillion

### Lot 2

- Real Test Use Cases
- Real devices by real partners
- Intended operation and response to markets

## ESA manufacturers

### Used in Lot 1 and 2

- Mixergy
- Glen Dimplex

# Technical feedback and learnings from the PAS



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# Interface A

DSRSP-CEM communication is handled by OpenADR 2.0

PAS1878 dictates a custom implementation

It contains peculiar implementation choices

Most of our feedback is on the PAS, but you might like to consider how your product is used and how OpenADR 3.0 might improve on that




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# Foundational issues

The PAS “provides a structure that is mapped on to the OpenADR protocol”

It removes events and changes reports classifications

It is inconsistent in its data handling, transmitting info via payloads, names, IDs etc.

XML has high overhead for high volume communication

Forecasting is delegated to the ESAs, which does not necessarily reflect reality



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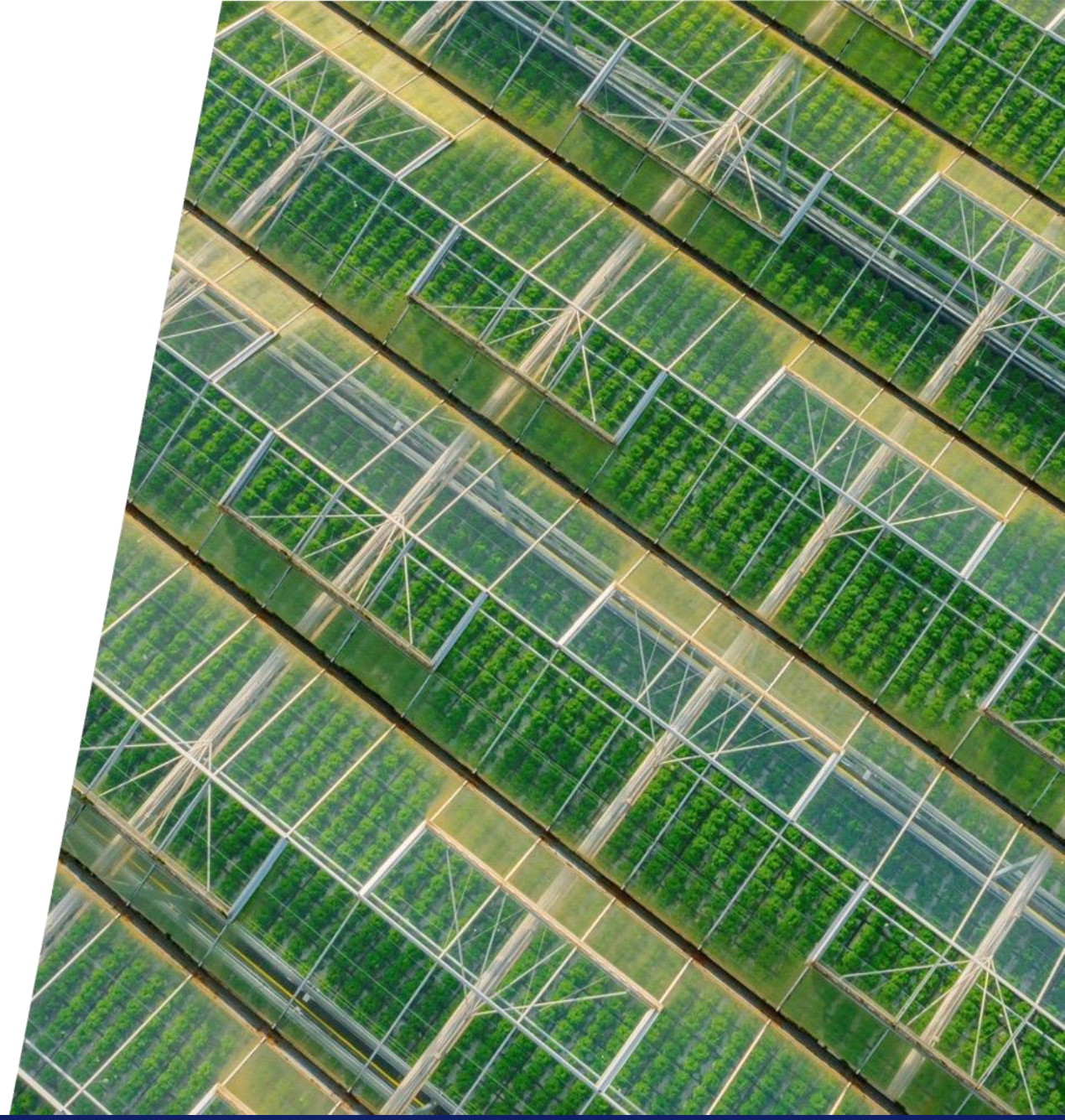
# Learnings

- OpenADR 3.0 avoiding XML is a positive. Care should be taken in reducing overhead

The successor of PAS1878 should, in our opinion:

- Mandate a standard which is
  - Normative
  - Non-ambiguous
  - Open
  - Not requiring custom implementation
- Ensure, through that standard, that each compliant DSRSP and CEM would automatically be interoperable
- Future OpenADR might aim to be a good choice for this standard



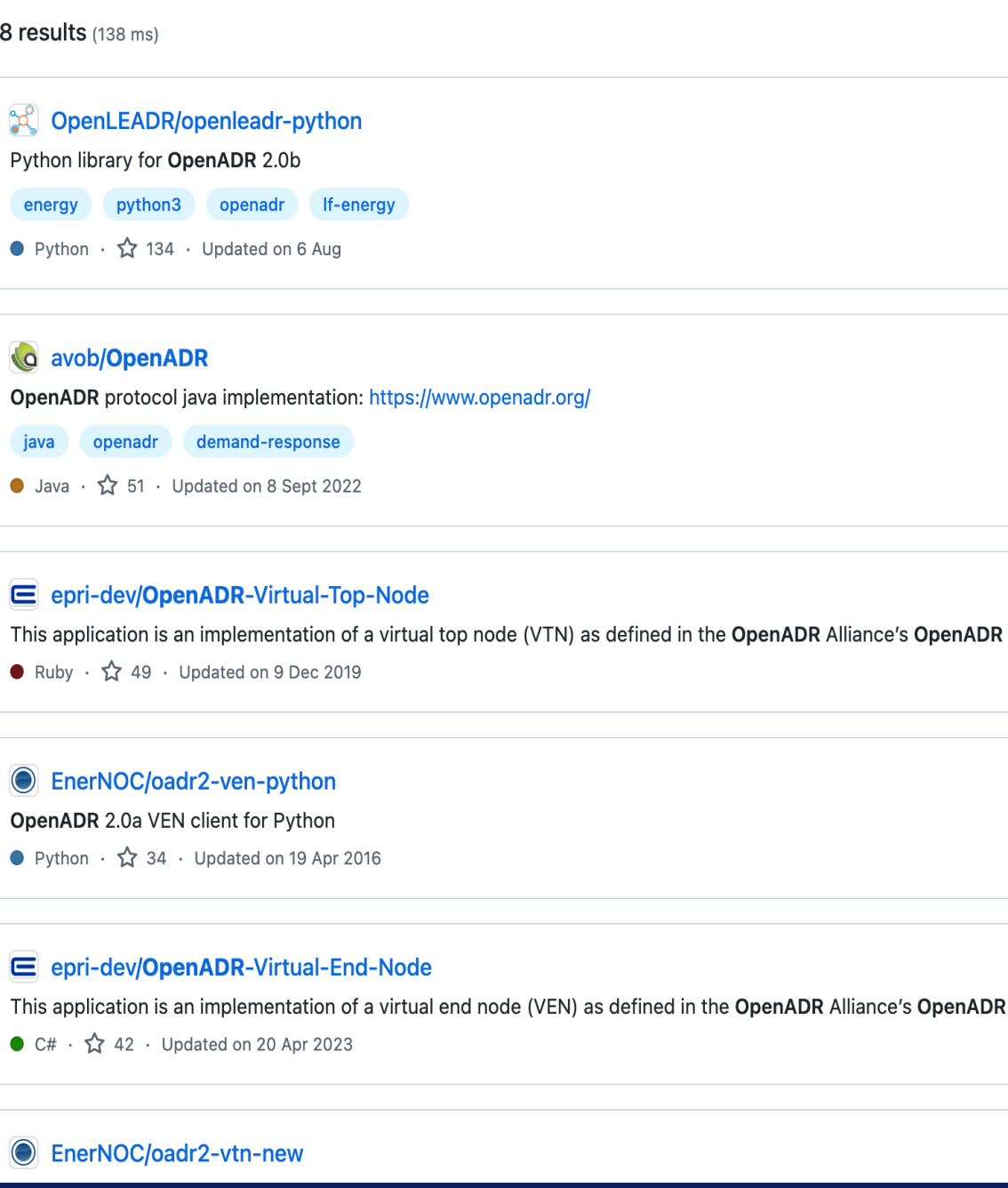
# OpenLEADR-python

Main Python library for OpenADR – Linux Foundation for Energy

Tricky to expand and customize, esp. to include the PAS-added requirements

Last release Feb 2023

OpenADR might consider allocating teams to maintaining libraries in multiple languages



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# Thank you



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