

tmforum

welcome

Member Project 101

Open APIs

27th September 2021

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tmforum
labs

Agenda

- **Member projects and collaboration**
 - Ian Turkington (TM Forum)
- **Introduction to Open APIs**
 - Andreas Polz (Beyond by BearingPoint)
- **API development**
 - Ludovic Robert (Orange)
- **API deliverables**
 - Steve Harrop (Vodafone)
- **Next steps – How to get involved**
 - Ian Turkington (TM Forum)
- **Q&A**
 - Everyone!

Member Projects and collaboration

Ian Turkington

VP Architecture & APIs, TM Forum

Labs

Drive real change as part of a supercharged team co-creating innovative solutions to industry challenges

- “Above all else, I value the power of collaboration and the different perspectives that the working group fosters.”

Shankar Kasturirangan,
President Managing Principle,
Nokia



Member projects

Join your peers and work in member projects on solving key challenges across AI, Open APIs, Open Digital Architecture, Autonomous Networks and more

Catalysts

Get ready to spark innovation with our rapid-fire Catalyst projects.

You can join or follow the teams creating solutions in just 6 months on topics including 5G manufacturing, digital twins and ecosystem management

Think tanks

Set the agenda as part of one of our think tank groups or advisory boards

With current working groups and boards on the 2025 CSP, beyond connectivity and ODA

- Utilize projects to **accelerate R&D**, gaining expertise to reduce time and cost in development cycles.
- Access unrivalled **channel to market** opportunities by demonstrating standards, best practices and products in real world scenarios with players from across the industry.
- Collaborate to **build your network** of potential expertise and partnering opportunities.

Open Digital Architecture

ODA is a living, breathing architecture blueprint, designed to support our industry into the cloud native era, setting the framework for CSPs to unlock growth, profitability and deliver a cutting-edge customer experience

YOUR GLOBAL PEERS ARE
WORKING TOGETHER TO SHAPE A
NEW DIGITAL FUTURE FOR OUR
INDUSTRY. JOIN THEM AND BE PART
OF AN INNOVATIVE COMMUNITY
PAVING THE WAY FOR THE REST.

- **ODA IS SUPPORTED BY 50+ OF THE WORLD'S LEADING CSPS AND TECHNOLOGY VENDORS.**

It's a truly global, collaborative effort to drive industry-wide transformation through software-based, automated, intelligent networks.

- **IT HAS BEEN ENTIRELY CREATED AND STRESS-TESTED BY OUR INDUSTRY, FOR OUR INDUSTRY.**

Collaborators have jointly created the architecture blueprint, capturing the best practice capabilities that exist today and harnessing them to drive forward our future.

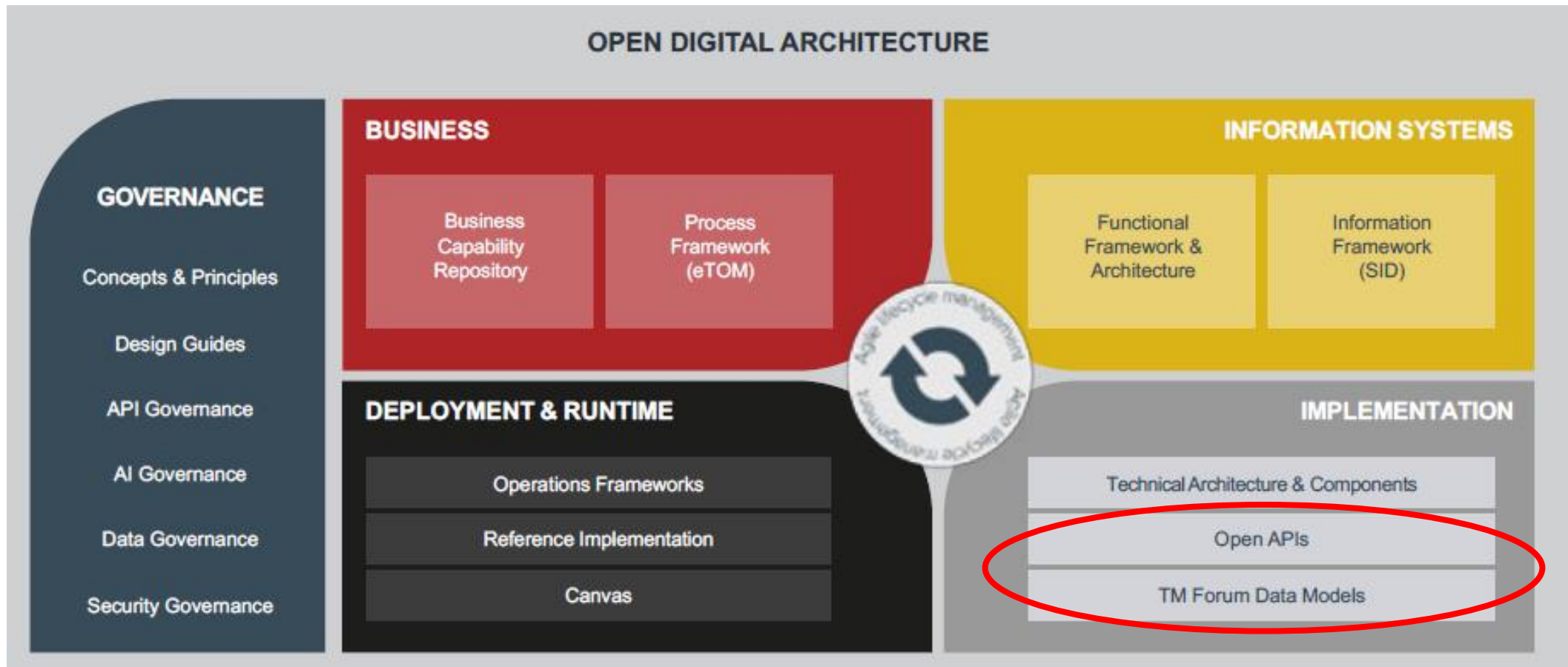
- **IT HAS A SUPPORT ECOSYSTEM WRAPPED AROUND IT.**

It drives improved communications and enables open and effective working between CSPs and technology vendors.

- **WE'RE NOT JUST TALKING ABOUT IT. ODA IS A LIVING BREATHING FRAMEWORK.**

It's continually evolving to stay ahead of technology, capabilities and new market opportunities – which means it's already driving change today.

Open Digital Architecture and Open APIs



Introduction to TM Forum Open APIs and history

Andreas Polz

SVP Chief Evangelist at Beyond by BearingPoint



The Open API Program : Why?

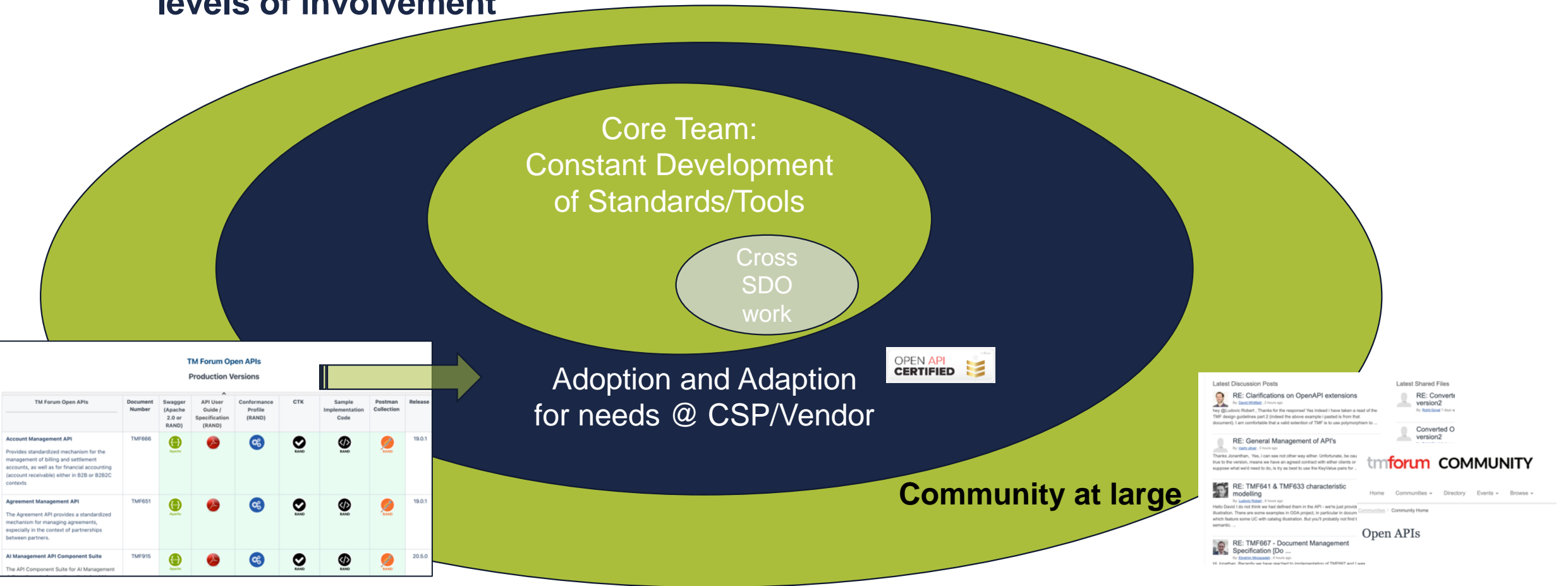
APIs are one of the most fundamental building blocks of Networks and Software today

- 'plug and play' set of technology capabilities that results in cost savings all round and faster time to go live.
- No Cloud-Native without APIs
- Sentenced to a life in hell (of upgrades and version problems) without proper APIs

API Standards Activity in TM Forum

A flurry of activity in concentric rings

As important as API Standards are, the activity around them comes in different levels of involvement



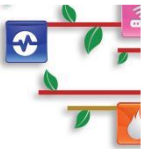
Project Overview – Open APIs

Project	Open APIs	
Summary	<p>In the age of the digital economy, services are typically delivered through a sophisticated partnering of multiple providers who are all using different systems and interfaces. The TM Forum APIs make it easier to create, build and operate complex innovative services. This set of standard interfaces enables rapid, repeatable, and flexible integration among operations and management systems. Designed for use on anything from IoT device management to complex B2B value fabrics and they apply to all the topics our members are focused on.</p>	
Theme Lead	Ian Turkington	TM Forum
Project Manager	Alan Pope Goutham Babu	TM Forum
SME Dev/Op	Pierre Gauthier Henrique Rodrigues	TM Forum
Initiative Leads	Andreas Polz	Beyond by BearingPoint
	Ludovic Robert	Orange
	Stephen Harrop	Vodafone
Regular meetings (London TZ)	API Development	Monday 1:00 pm
	API Tooling	Monday 2:00 pm
	API Team Call	Wednesday 1:00 pm
	API Governance	Wednesday 2:00 pm
	API Architecture	Thursday 4:00 pm
	API x-SDO coordination (e.g. with MEF)	Thursday 5:00 pm

The Open API Program : History

APIs and Interfaces have always been a foundation of the standards in TM Forum

- From early, point-to-point interfaces in the beginning.
- To MTOSI in the early 2000s.
- To the TMF TIP Program from 2009 to 2014.
- To the (Open) API program from 2011 on.



Framework Reference

MTOSI 4.0 Release Notes

Release History (MTOSI Release)

Release Number	Date Modified	Modified by:	Description of changes
1.0	June 2005	MTOSI Team	Initial version
1.1	October 2006	MTOSI Team	<ul style="list-style-type: none">• Bug fixes• Support for HTTP

The Open API Program : Team History

Paris



Vienna



London



Lisbon

API development

Ludovic Robert

IT Senior Architect, Orange

How the TMF Open APIs are build?

■ Multi company contributions – API development and then API lifecycle (improvement) is lead, at a given time, by **one individual** from our TMF open APIs core team...

■ ...but this is a **team effort**:

- API design is shared to get Open API project member feedbacks (Business UC, API Pattern, ODA positioning, SID alignment, API footprint consistence, etc....)
- TMF staff provide help & guidance and **final GO**
- Listen to **API feedbacks** (we use Jira to track them):
 - **Community board** (<https://engage.tmforum.org/home>) (*Thanks Jonathan G. !!*)
 - Catalyst contribution
 - Open API project member providing feedback

existing API enhancements are discussed and assessed to be integrate in future release.

+300 new threads for this year on the tmforum Open APIs community

How do we work?

A week of work with the TMF open API team

Day	Meeting	Purpose	GMT UTC, WET	CET, UTC+1	Eastern ST, UTC-5
Monday	API Development Work Session	Team discussion and review of new API or (major) update of existing one	13:00	14:00	08:00
Monday	Tooling update and review	Discussion of improvement & issues of all our tooling	14:00	15:00	09:00
Wednesday	API weekly team call	Team-wide meeting for sprint management	13:00	14:00	08:00
Wednesday	Open API governance	Respond/allocate recently-raised JIRA issues	14:00	15:00	09:00
Thursday	API Architecture, usage patterns and design guidelines	Technical discussion of longer-range issues and/or review of new/updated APIs and design guidelines	16:00	17:00	11:00
Thursday	TMF-MEF-ONAP API Alignment	Open session with other SDOs leveraging TMF open APIs to share roadmap, tools and request	17:15	18:15	12:15

In this session, hosted by Ludovic, we discuss new API or major API enhancements – example:

- Proposal for a new APIs: in 2021...Distributed ledger management, Shipping Order & Shipment, Data Governance API, Digital Identity API, Topology Graph API, etc...
- Improve existing APIs: UserRole & Permission API, Loyalty API, set of Jira on boarded with OAS transition, Recommendation API, Change Management API, etc...
- Agenda is shared here: <https://projects.tmfforum.org/wiki/display/AP/API+Development+Work+Meetings>

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We have a lot of great tooling to help us for API swagger generation (from JSON schemas), UML resource model generation, user guide, conformance profile, etc... *(Thanks to our members Joel B. & Knut J.)*

In this session lead by Henrique (TMF - Head of Labs & Tooling) we discuss tooling use feedback & improvements + git configuration management

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Where are we on release delivering ? What is on deck for next sprint ? Which are the topic to be discussed in development call? Who need help on API development? How we handle partnership with another organizations?

In this Wednesday call, lead by TMF staff (Alan, Goutham, Pierre) this is 'classic' **API project team follow-up** - The '*do-not-miss-spot*' to overview current work in progress

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All request for new APIs, enhancements, or bug fixes are tracked via Jira. In this session, lead by Steve, we go through the 'new' Jira(s) to assess them:

- Discuss resolution
- Plan Monday session (when required in deep session)
- Affect people
- Link to sprint

151 new Jiras for New Feature/Improvement/Bug for this year

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Consistency between APIs is a **must-have** for adoption → All TMF Open API must share same pattern (which are all defined in TMF630 documents): notification, path & naming, schemas, JSON-PATH, query parameters, polymorphism & extension, etc.

In this session we also review **cross-work with other TMF projects** like review of ODA Component and ODA use of APIs in E2E flows.

Session lead by Pierre

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Weekly sync-up to **provide API support for others SDOs**: TMF open APIs could be used and extended by other organizations (MEF, ONAP, etc.). This session is hosted by Alan.

We design & share Domain-Specialization-Context recommendations. In practice, we provide:

- Generic Context (GC) schema to define the mandatory representation of an API resource
- TMF schema
- Tooling to generate swagger & uml diagrams – leveraging GC & SDOs specialized schemas







API deliverables

Steve Harrop

Principal Integration Architect, Vodafone Group

API Deliverables

All API deliverables are listed on the API table:

TM Forum Open APIs	Document Number	Swagger (Apache 2.0 or RAND)	API User Guide / Specification (RAND)	Conformance Profile (RAND)	CTK	Sample Implementation Code	Postman Collection	Release	Version	Lifecycle Status
Account Management API Provides standardized mechanism	TMF666	 Apache			 RAND	 RAND	 RAND	19.0.1	v4.0.0	Production

- **The API definition:** Historically in Swagger v2 file format, soon to be in OAS v3 file format
This describes the resource you are interacting with (like a ProductOrder, TroubleTicket), the operations you can do to it (like Create (POST), Read (GET), Update (PATCH) or Delete (DELETE)).
- **The API User Guide:** This PDF describes the resource in plain English, with a data model diagram and example payloads.
- **The Conformance Profile:** This PDF describes all of the mandatory attributes and relationships expected from an implementation. This largely reflects what is stated in the API definition, but may occasionally add some more subtle points.
- **The Conformance Test Kit (CTK):** This is a Postman collection that will allow Postman act as a client of the API, to exercise every mandatory operation, giving it example payloads and expecting (asserting) that all of the mandatory attributes and relationships are present in the response.
- **Sample Implementation:** This is a code-generated skeleton implementation (Node.js, MongoDB) of the API. When hosted, it will mimic the API, storing anything POSTed and returning it in GET operations.
- **Postman Collection:** A stripped-down CTK that only POST's a sample payload – this can be used in development and basic unit testing.

Next Steps

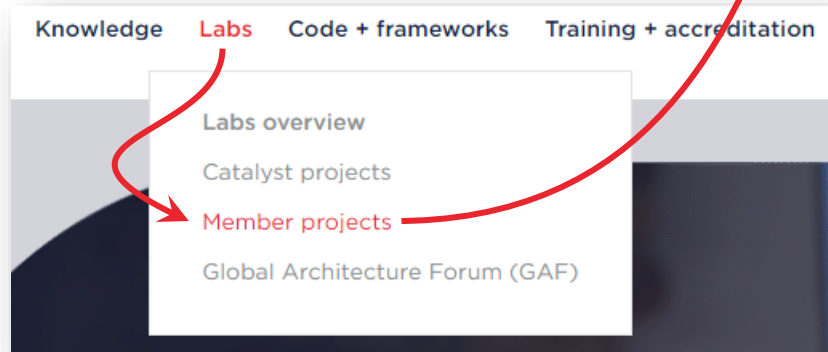
Ian Turkington

VP Architecture & APIs, TM Forum

Next Steps

Join the project

- Start at [tmforum.org](https://www.tmforum.org/)
<https://www.tmforum.org/>



New members on boarding
19th Oct 5:00pm (CEST)

Current projects

All of the programs and initiatives underway at TM Forum are designed to help our member companies improve operational agility while reducing costs and risk, engage customers, expand market share and drive revenue growth through new services.

We count on members like you to not only set the priorities for our work, but also to contribute to the collaborative projects that build the thought leadership, guide books, best practices and standards that shape the future for digital business in any industry. Here are all the projects you can join - click the links to learn more or join.

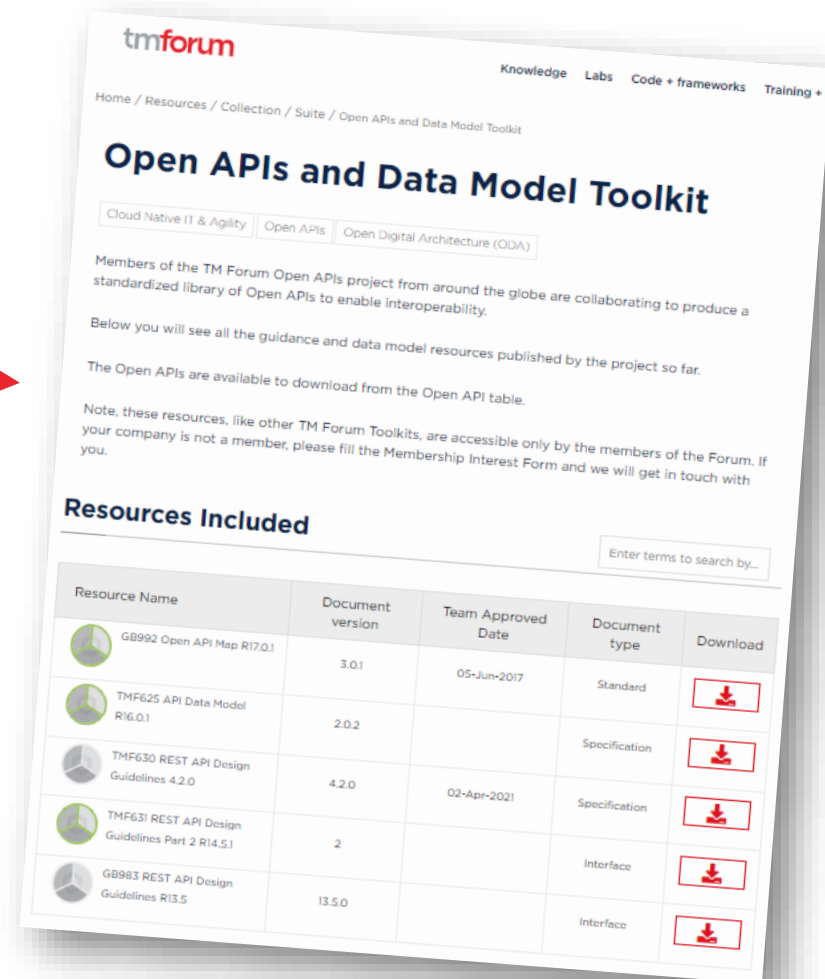
Looking for the ODA project? There are several projects where you can participate to actively develop the ODA standards. The key foundational projects for ODA are: End-to-end ODA, Business architecture, Information systems architecture, Open APIs, Technical architecture & components, and AI operations.

Projects	
End to end ODA Be apart of the team that captures the 'voice of the member' to ensure that ODA assets from different teams converge, join-up, and are useable.	JOIN THE PROJECT Learn More
Information systems architecture Get involved with the project that covers the information systems architecture part of ODA including the ODA functional architecture, Information Framework (SID), Functional Framework (FF), and Business Process Framework (eTOM).	JOIN THE PROJECT Learn More
Open API Apache 2.0 Be part of the team that is developing the "code" part of the TM Forum Open APIs, to be licensed under the Apache 2.0 license mode. This includes re-releasing APIs previously released under RAND	JOIN THE PROJECT Learn More
Open APIs Join your peers to create a set of standard interfaces that enable rapid, repeatable and flexible integration among operations and management systems.	JOIN THE PROJECT Learn More
Technical architecture & components Work with peers to define TM Forum reusable plug-and-play components. This project maintains the master list of components, and defines specific component specifications. In addition to the components, the project also covers the ODA technical architecture.	JOIN THE PROJECT Learn More

Next Steps

Find out more

- Open API page
<https://www.tmforum.org/open-apis/>
- Open API Toolkit
<https://www.tmforum.org/resources/toolkit/open-apis-and-data-model-toolkit/>
- Open API table
<https://projects.tmforum.org/wiki/display/API/Open+API+Table>
- ODA page
<https://www.tmforum.org/oda/>



Q&A

**thank
you**

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