



European Factory
Platform

TANGO

EFPF Open Call Pitching and Exhibition

27-28.09.2022

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- **Introduction**

- Xgility is an innovative SME operating in the digitalisation and enterprise automation domain
- Worked on planning and coordination system. Also worked in document management domain

- **Project Overview**

- Tango planning and coordination system for distributed manufacturing scenarios, delivers an intuitive production planning and coordination system for distributed manufacturing and supply chain scenarios

- **Main idea/concept**

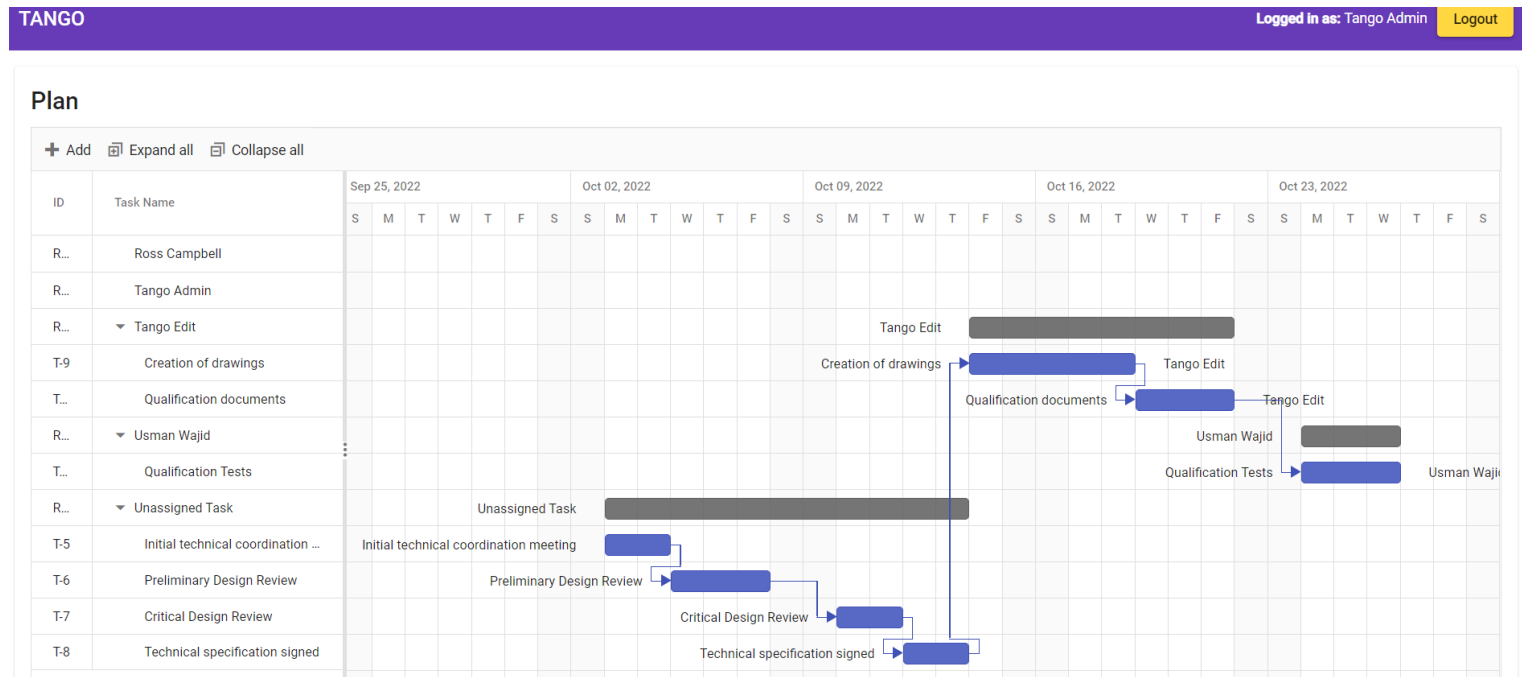
- TANGO enables the development of (shared) plans and provides necessary interfaces and APIs and information system feeds (through Data Spine) that articulate the plans and coordinate the associated partner activities.

- **Project Objectives**

- To deliver an operational planning system (TANGO) that is validated (both in terms of functional and non-functional aspects) in real-world supply chain scenarios through the involvement of EFPP user partners
- To enable companies to design collaborative plans and share real-time status of planned activities within security and privacy constraints
- To integrate the developed system in the EFPP federation and offer through EFPP Portal for wider reach and recognition
- To develop innovative business models that support the exploitation of TANGO towards different types of users/customers
- To introduce TANGO in the target market (manufacturing SMEs) by taking advantage of the EFPP dissemination and communication activities

Technical Achievements

- **TANGO** -- A distributed and operational planning system that connects and synchronises the activities of multiple entities and systems to bring coherence and reliability in collaborative networks.
- Fully functional prototype of the cloud-based solution, hosted in-cloud

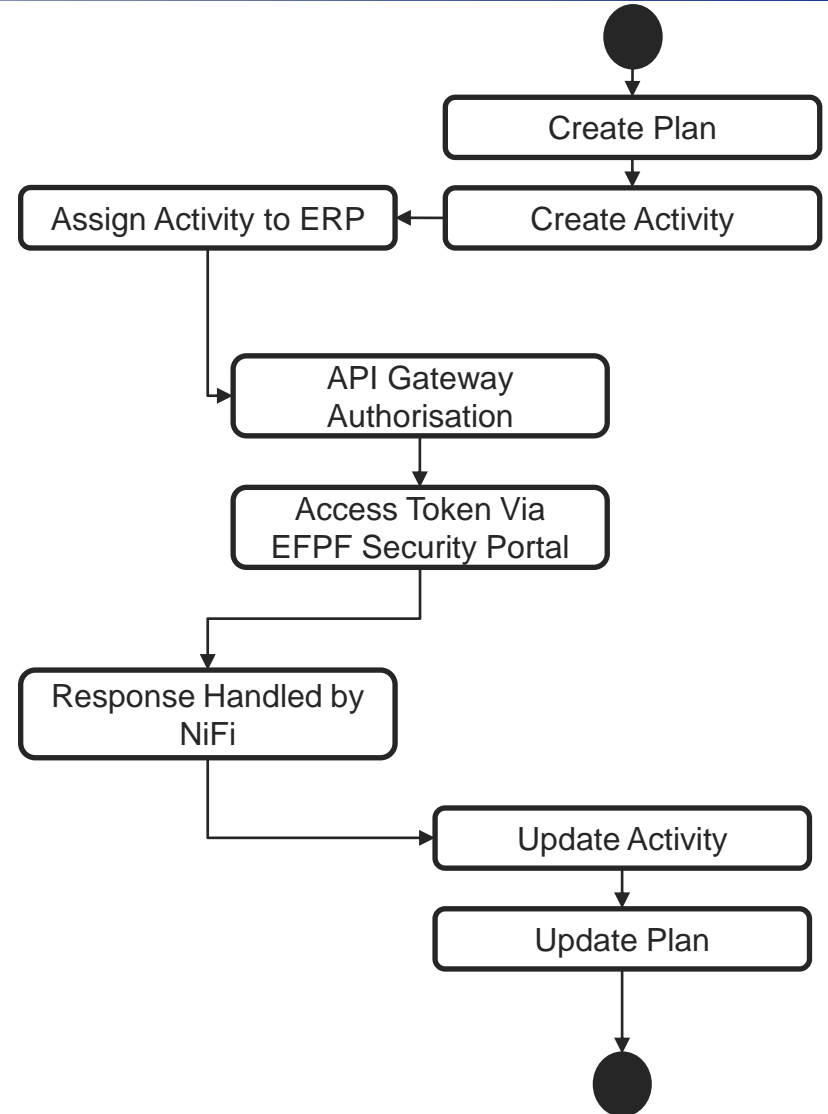
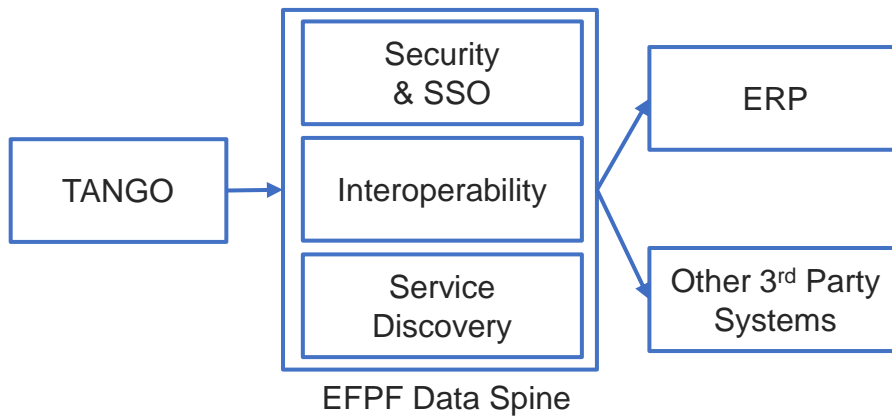


Technical Achievements

- **TANGO** – key features include:
 - Create, edit and update plans with multiple entities and systems
 - Plans are private and protected through role-base access
 - Assign activities (within a plan) to different people and systems
 - Each assignee gets the assignment by email with a link to update
 - People: Updates can be made through an intuitive user interface
 - System: Updates can be made through secure API connectivity
 - Realtime updates in the plans enable visibility of distributed activities
 - Plans are monitored and automatically updated to adjust disruptions
 - TANGO is integrated within EFPF Portal through SSO
 - External connectivity and interoperability is enabled by Data Spine
 - EFPF Security Portal
 - API Security Gateway
 - Service Registry
 - Nifi

Technical Achievements

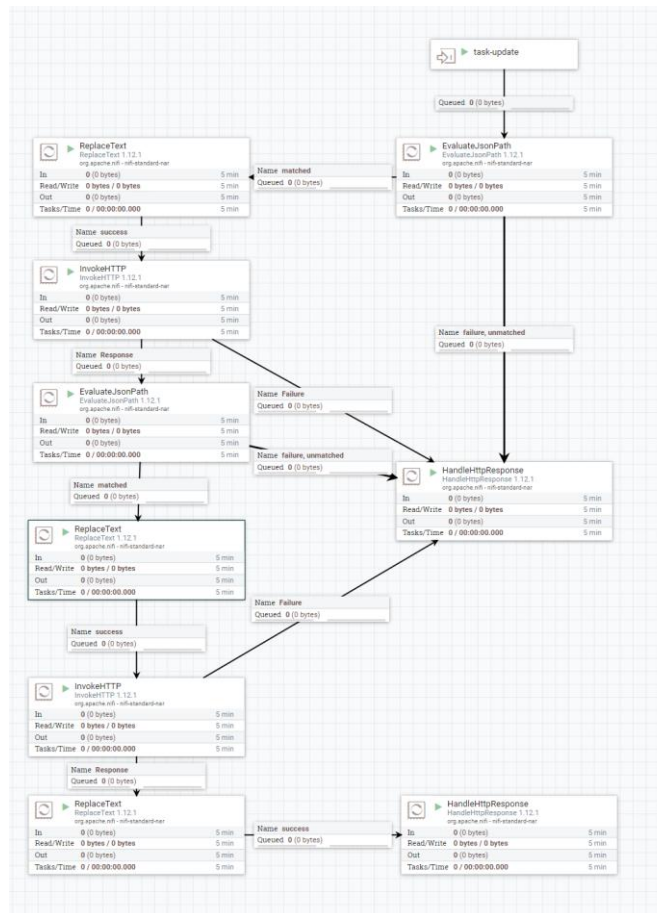
- **TANGO** – key interactions with EFPF:



Technical Achievements

- TANGO – Task-Update Workflow:**

Listen to incoming request -> store body attributes -> Get Tango Token -> Store Tango Token – Put Tango Update Task -> Return Response



- **TANGO – KPIs and Achievements**

KPIs	Achievements
<ul style="list-style-type: none"> • Design, storage, execution and monitoring of plans with multiple collaborative companies/partners 	<ul style="list-style-type: none"> ✓ Done – Plans can be designed, stored, executed and monitored by multiple users
<ul style="list-style-type: none"> • Parallel execution of multiple plans while preserving the integrity and privacy of users e.g. plans can only be shared and updated by specific users 	<ul style="list-style-type: none"> ✓ Done - Multiple plans can be created and executed in parallel
<ul style="list-style-type: none"> • Scheduling and real-time tracking of multiple tasks assigned to different partners through intuitive interfaces 	<ul style="list-style-type: none"> ✓ Done - Tasks assigned to different partners can be tracked and updated automatically
<ul style="list-style-type: none"> • Testing and validation of TANGO functionality involving users ≥ 4 	<ul style="list-style-type: none"> ✓ Done - TANGO functionality is validated with 2 internal and 2 EFPP users
<ul style="list-style-type: none"> • Integration with ≥ 4 EFPP components/services (e.g. Data Spine, Portal, Security Portal, Risk Management, Secure Data Storage and Marketplace) 	<ul style="list-style-type: none"> ✓ Done – Integration completed with Integration Flow Engine, Security Portal, Portal, API Security Gateway, Service Registry
<ul style="list-style-type: none"> • Success rate of integration tests = 100% 	<ul style="list-style-type: none"> ✓ Done – As demonstrated in the final review meeting with the EFPP advisor

Demonstration of TANGO

Impact Achievements

- **Dissemination Results**
 - TANGO website and promotion material is designed and developed



TANGO - Interorganizational Planning and Coordination Solution

TANGO connects multiple partners to work together on joint activities that require the efficient orchestration, management and coordination of distributed but interlinked activities taking place at partner sites ...

TANGO comes as a cloud-based solution or you can discuss local deployments with our friendly experts

- Get Timely Updates on Distributed Activities: TANGO provides an intuitive user interface to gather timely updates from collaborative partners concerning interdependent activities.
- Dynamically Update Plans based on Feedback: Real-time feedback gathered from collaborative entities can be used to adjust and update local activities resulting in cost savings.
- Get Technical Support: Xgility offers expert technical support to setup and manage TANGO in your environment and to automate your business.

TANGO is offered both as a cloud-based solution and in an on-site deployment model, allowing for greater control over the users and data ...

The development of TANGO is supported by the funding received from the European Union's Horizon 2020 research and innovation programme through the EFPP project. EFPP - Grant No. 825030

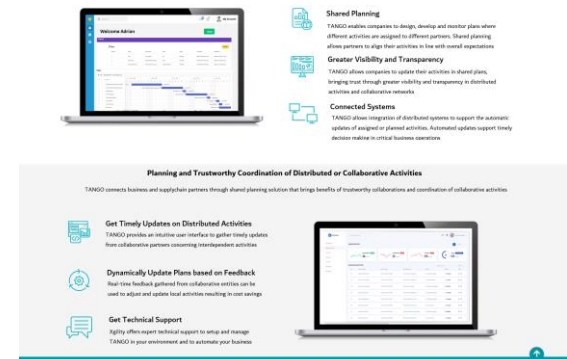
Shared Planning and Coordination of Distributed Activities Made Easy with TANGO

- Link distributed partners and interdependent activities through an intuitive user interface
- Share your plans with collaborative partners and get real-time updates on partners' planned activities
- Address your planned activities based on timely knowledge of bottlenecks or problems at partners' site

Contact: info@xgility-project.eu, xgility.co.uk, @xgility; info@ef-foundation.com, ef-foundation.com, @EFF, @EFPP



TANGO helps companies work on collaborative projects with certain level of expectancy and transparency. Distributed activities in collaborative networks or supply-chains can be planned, orchestrated and dynamically updated through the shared planning solution provided by TANGO



Shared Planning
TANGO enables companies to design, develop and monitor plans where different activities are assigned to different partners. Shared planning allows partners to align their activities to the world-wide experience.

Greater Visibility and Transparency
TANGO allows companies to update their activities in shared plans, bringing trust through greater visibility and transparency in distributed activities and collaborative networks.

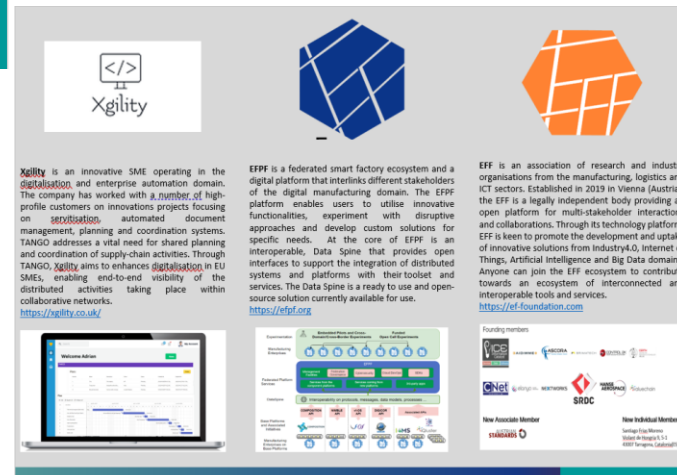
Connected Systems
TANGO allows integration of distributed systems to support the automatic updates of assigned or planned activities. Automated updates support timely decision relative to critical business operations.

Planning and Trustworthy Coordination of Distributed or Collaborative Activities

TANGO connects business and supplier partners through shared planning solutions that brings benefits of trustworthy collaborations and coordination of collaborative activities.

- Get Timely Updates on Distributed Activities: TANGO provides an intuitive user interface to gather timely updates from collaborative partners concerning interdependent activities.
- Dynamically Update Plans based on Feedback: Real-time feedback gathered from collaborative entities can be used to adjust and update local activities resulting in cost savings.
- Get Technical Support: Xgility offers expert technical support to setup and manage TANGO in your environment and to automate your business.

- Presentations and demonstrations at 2 Xgility customers are organized during the project lifetime
- Other activities are planned



Xgility is an innovative SME operating in the digitalisation and enterprise automation domain. The company has worked with a number of high-profile customers on innovations projects focusing on automation, automated document management, planning and coordination systems. TANGO addresses a vital need for shared planning and coordination of supply-chain activities. Through TANGO, Xgility aims to enhance digitalisation in EU SMEs, enabling end-to-end visibility of the distributed activities taking place within collaborative networks. <https://xgility.co.uk/>

EFPP is a federated smart factory ecosystem and a digital platform that interlinks different stakeholders of the digital manufacturing domain. The EFPP platform enables users to utilise innovative functionalities, experiment with disruptive approaches and develop custom solutions for specific needs. At the core of EFPP is an interoperable, Data Spine that provides open interfaces to support the integration of distributed systems and platforms with their toolset and services. The Data Spine is a ready to use and open-source solution currently available for use. <https://efpp.org>

EF is an association of research and industry organisations from the manufacturing, logistics and ICT sectors. Established in 2019 in Vienna (Austria), the EF is a legally independent body providing an open platform for multi-stakeholder interactions and collaborations. Through its technology platforms, EF is keen to promote the development and uptake of innovative solutions from Industry 4.0, Internet of Things, Artificial Intelligence and Big Data domains. Anyone can join the EF ecosystem to contribute towards an ecosystem of interconnected and interoperable tools and services. <https://ef-foundation.com>

Founding members: [Logos of founding members]

New Associate Member: [Logos of new associate members]

New Industrial Member: [Logos of new industrial members]

Impact Achievements

- **Exploitation Plan related to EFPP outcomes**
- **Business Model:**
 - Freemium version maintained on the EFPP platform to be accessible to all EFPP users for 1-year after the end of the project
 - Premium licence-based version (monthly subscription per user) with added benefits of custom support, bespoke integrations and updates
- **IPR and Sustainability**
 - IPR aspects clarified with the study of EFPP documentation and discussion with the advisor
 - Discussions with EFF will continue on developing joint initiatives

- **Summarize your EFPF Experience**
 - Overall, a very positive experience of experimenting with innovative concepts and technologies
 - The tools and support services were easy to access and easy to use
 - The documentation and advisory services provided timely support
 - The technical solutions offer ready to use functionality and new ideas on developing innovative business ventures
 - Enhancement of documentation with use-case examples and more visibility of technical support channels will be helpful to new users
 - More clarity of business benefits is needed to promote the uptake of EFPF and EFF offerings
 - The discussions with EFPF and EFF partners should help develop new research and innovation ventures



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Thank you for your attention!