

DSO4DT – DSOs for Digital Twins

Coordinated by DSO Entity and supported by its
Task Force Digitalisation of the Energy System (TF DESAP)

Presented by Stephan Gross

Table of Contents

Welcome

Part 1

Greetings by the European Commission

Part 2

Presentation of the DSO4DT project

Part 3

Q&A

Part 4

Closing remarks

Part 1: Greetings by the European Commission



Part 2: Presentation of the DSO4DT project

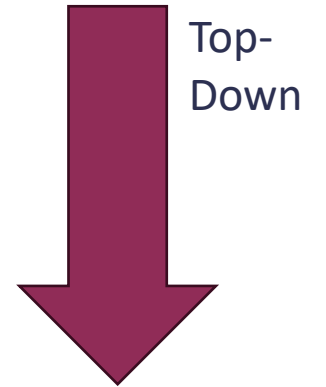


Content for the introduction to the DSO4DT project

1. Background of the HE DSO4DT project and the grants to identified beneficiaries
2. DSO4DT's objectives and methodology
3. Project plan and work packages
4. Timeline
5. Stakeholder engagement

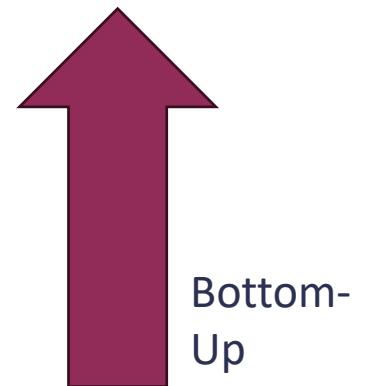
DSO Entity works already on Digital Twins since 2023 together with ENTSO-E

- The DSO4DT project started in January 2025 and will allow **DSO Entity to intensify its engagement to support the development of Digital Twins** for the energy sector.
- DSO4DT project aims to foster a **community of stakeholders** involved in the development of Digital Twins and linking these stakeholders to the European DSOs.
- DSO Entity will further **collaborate closely with ENTSO-E** on the topic of Digital Twins.



Joint effort towards Digital Twins

- ENTSO-E and DSO Entity signed a **Declaration of Intent in late 2022**, committing to joint efforts on **Digital Twins and Smart Grid Indicators** in line with the EU Action Plan for Digitalising the Energy System (COM/2022/552).
- Since 2024, both organizations have been collaborating on these topics under an internal project plan for 2024–2025, which includes the establishment of an **advisory board in early 2024**.
- Their engagement on Digital Twins is expected to extend beyond 2025.



The Grant to Identified Beneficiaries

- The Horizon Europe 2023–2024 Work Programme (Cluster 5) includes a grant for identified beneficiaries, specifically appointing DSO Entity.
- This grant aims to enhance DSO Entity's support in the development of the Digital Twin.
- The project call explicitly recognizes the TwinEU project as a key stakeholder.
- The project proposal follows the guidelines for a Coordination and Support Action (CSA) call.

Objectives of DSO4DT

- Digital Twins are understood to improve the management, operation and resilience of the electricity power grids supporting the REPowerEU strategy.
- The European activities working on developing Digital Twins for the electricity grid can only be successful if the European electricity system operators support them. The European DSOs will provide this support within the DSO4DT project.

3 Core Objectives



1. Mobilize DSO Entity's members to support the European Digital Twin Activities



2. Boost the uptake of Digital Twins, smart grid, and innovative grid technologies



3. Enhance DSO Entity's digital, operational and technical expertise to mobilize its members

Interlinked Objectives

Coordination and Methodology

DSO4DT project will achieve the its objectives through a three-step approach:*

1

- Establishing **working level connection** between DSO Entity's EGs and relevant Digital Twin Activities
- Facilitates **collaboration** between technical experts from Digital Twin Activities and DSO Entity's member base

2

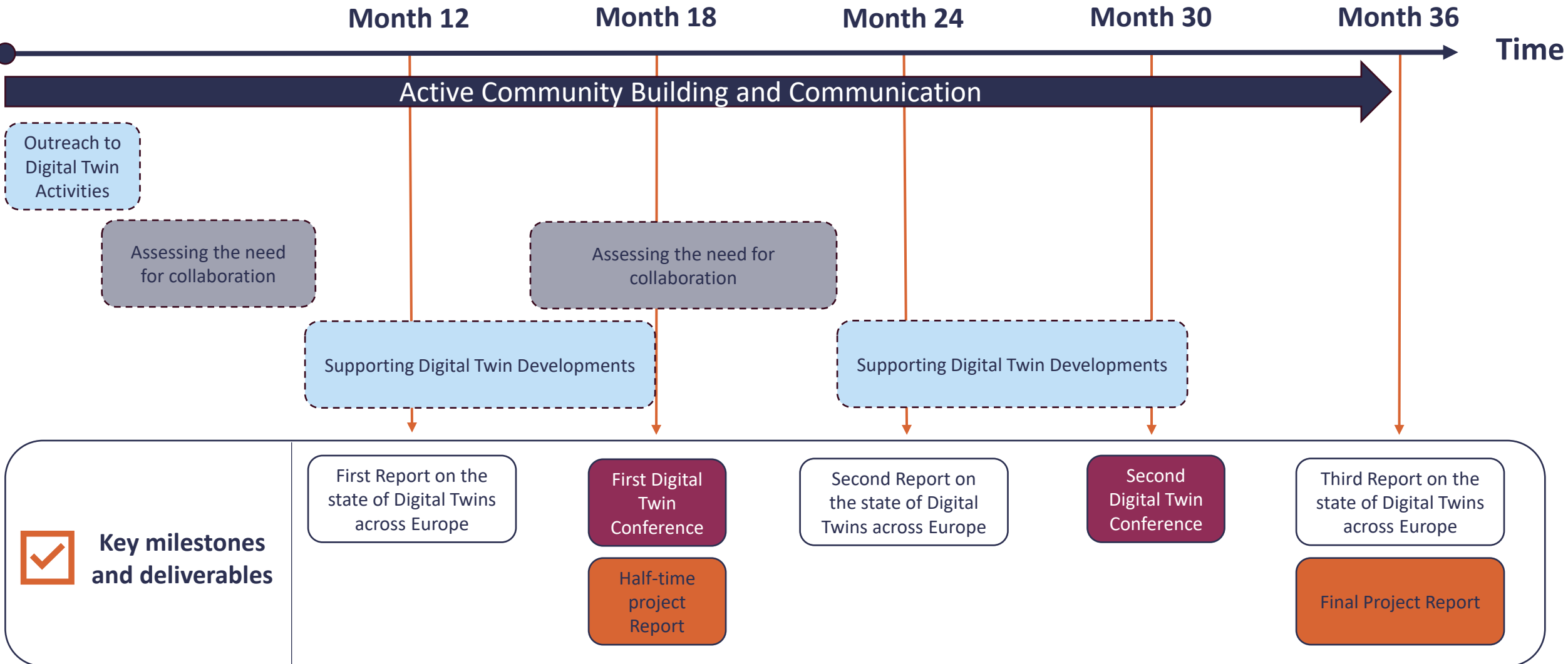
- Outreach to the larger stakeholder group impacted by Digital Twins in the future (incl. ENTSO-E)
- **Disseminate the initial findings** from the working level exchanges in step one to a wider audience
- Special focus placed on **smaller members and national DSO association** which act as multipliers in disseminating

3

- Accelerating the **uptake of Digital Twins** across Europe by extending knowledge sharing among all DSOs
- Promote Digital Twins that have **demonstrated a measurable impact** on the electricity system by disseminating and **sharing knowledge** about their adoption
- Establish a **collaborative knowledge platform** on Digital Twins

*The three steps overlap and influence each other, thus are not sequentially restricted as visualized:

DSO4DT Project Implementation



WP1 :Mobilizing the European DSOs to Support the Realization of Digital Twins

Start Month: 1

End Month: 31

Objectives

- Mobilize experts from European DSOs and foster collaboration with ongoing Digital Twin Activities (TwinEU, OpenDEI, IntNet, BRDIGE)
- Project will identify support needs of the activities, focusing on targeted outcomes:
 - Strengthened observability and controllability of the grid
 - Optimized infrastructure and network planning
 - Joint modeling
 - Increased use of active system management and forecasting to support flexibility and demand response
- Establish a needs assessment and conduct extended outreach to stakeholders
- Following the needs assessment, TF DESAP will collaborate with Digital Twin Activities to provide the required support.

Deliverables

- Five reports will be drafted throughout the projects duration and will share the projects assessments and support provided to Digital Twin Activities.

Deliverables:

- Report on Initial Contact with Digital Twin Activities (M3)
- Report on Digital Twin Activities Support Needs Assessment – First Iteration (M9)
- Report on Support Provided to Digital Twin Activities – First Iteration (M18)
- Report on Digital Twin Activities Support Needs Assessment – Second Iteration (21)
- Report on Support Provided to Digital Twin Activities – Second Iteration (M31)

WP2: Outreach on Digital Twin Developments

Start Month: 1

End Month: 36

Objectives

- The DSO4DT project will conduct broader outreach to stakeholders, such as DSO Entity members not involved in EGs and TFs, other associations, regulators, technology providers, scientists and policymakers.
- Organize two large-scale conferences to discuss and exchange with relevant stakeholder on latest developments in Digital Twins, as well as the practical implementation of Digital Twins within the European electricity sector.
- Special focus on outreach will be extended to small DSOs (fewer than 100,000 connections). To do so, DSO4DT project will utilize two approaches:
 1. Collaborate with national DSO associations who understand national and regional contexts.
 2. A bilateral strategy that will directly engage with smaller DSOs through a series of interviews.

Deliverables

- Work Package two outlines three key clusters of deliverables; Conferences, Reports on Insights from the Conferences, as well as Reports on findings from the conducted outreach.

Deliverables:

- Two Digital Twin Conferences (M01-M20), (M18-36)
- Report on Key Findings from DSO Entity's Extended Network Outreach – First Iteration (M16)
- Report on Key Findings from DSO Entity's Extended Network Outreach – Second Iteration (M29)
- Report on Insights from the first Digital Twin Conference (M20)
- Report on Insights from the second Digital Twin Conference (M36)

WP3: Dissemination and Actions to Accelerate the Uptake of Digital Twins Across Europe

Start Month: 1

End Month: 36

Objectives

- Promote the DSO4DT project within DSO Entity's communication channels – newsletters and social media – to reach its member base.
- Upgrade and further development of a knowledge platform in response to action 7 of the Grid Action Plan (COM/203/757). This platform will promote and disseminate Digital Twins that address specific challenges faced by system operators.
- Implement a community management mechanism within all WPs that will include communication via a collaboration platform and organizing training sessions and webinars to keep the community informed.
- Produce three reports on the state of Digital Twins, including forward-looking roadmap and recommended next steps for their development and adoption.

Deliverables

- Work Package three will deliver three iterations of the state of Digital Twins for the Electricity Grid Across Europe, which will be gathered through expert-level exchanges facilitated by WP1 and the outreach activities in WP2. The final iteration will provide a comprehensive overview of the European Digital Twin landscape, mapping challenges faced by system operators.

Deliverables:

- Report on the State of Digital Twin for the Electricity Grid Across Europe – First Iteration (M12)
- Report on the State of Digital Twin for the Electricity Grid Across Europe – Second Iteration (M24)
- Report on the State of Digital Twin for the Electricity Grid Across Europe – Third Iteration (M36)

WP 4: Project Management

Start Month: 1

End Month: 36

Objectives

- Dedicated to overseeing operational aspects of the project, including management of financial matters, project management practices, and tracking of the project's objectives.

Deliverables

- Work Package four intends to organize and structure all aspects within the projects management tasks, which will report on progress made throughout its duration.

Deliverables:

- Half-time project status report (M18)
- Project final implementation report (M36)
- Data management plan (M6)

Deliverables

Content

- **D2.1** Report on Key Findings from DSO Entity's Extended Network Outreach – First Iteration (M16)
- **D2.2** Report on Key Findings from DSO Entity's Extended Network Outreach – Second Iteration (M29)
- **D3.1** Report on the State of Digital Twins for the Electricity Grid Across Europe – First Iteration (M12)
- **D3.2** Report on the State of Digital Twins for the Electricity Grid Across Europe – Second Iteration (M24)
- **D3.3** Report on the State of Digital Twins for the Electricity Grid Across Europe – Third Iteration (M36)
- **D4.2** Project final implementation report (M36)

Process

- **D1.1** Report on Initial contact with Digital Twin Activities (M3)
- **D1.2** Report on Digital Twin Activities Support Needs Assessment – First Iteration (M9)
- **D1.3** Report on Support Provided to Digital Twin Activities – First Iteration (M18)
- **D1.4** Report on Digital Twin Activities Support Needs Assessment – Second Iteration (M21)
- **D1.5** Report on Support Provided to Digital Twin Activities – Second Iteration (M31)
- **D2.3** Report on Insights from the first Digital Twin Conference (M20)
- **D2.4** Report on Insights from the second Digital Twin Conference (M36)
- **D4.1** Half-time project status report (M18)
- **D4.3** Data Management Plan (M6)

Work Package Timeline

Work Packages

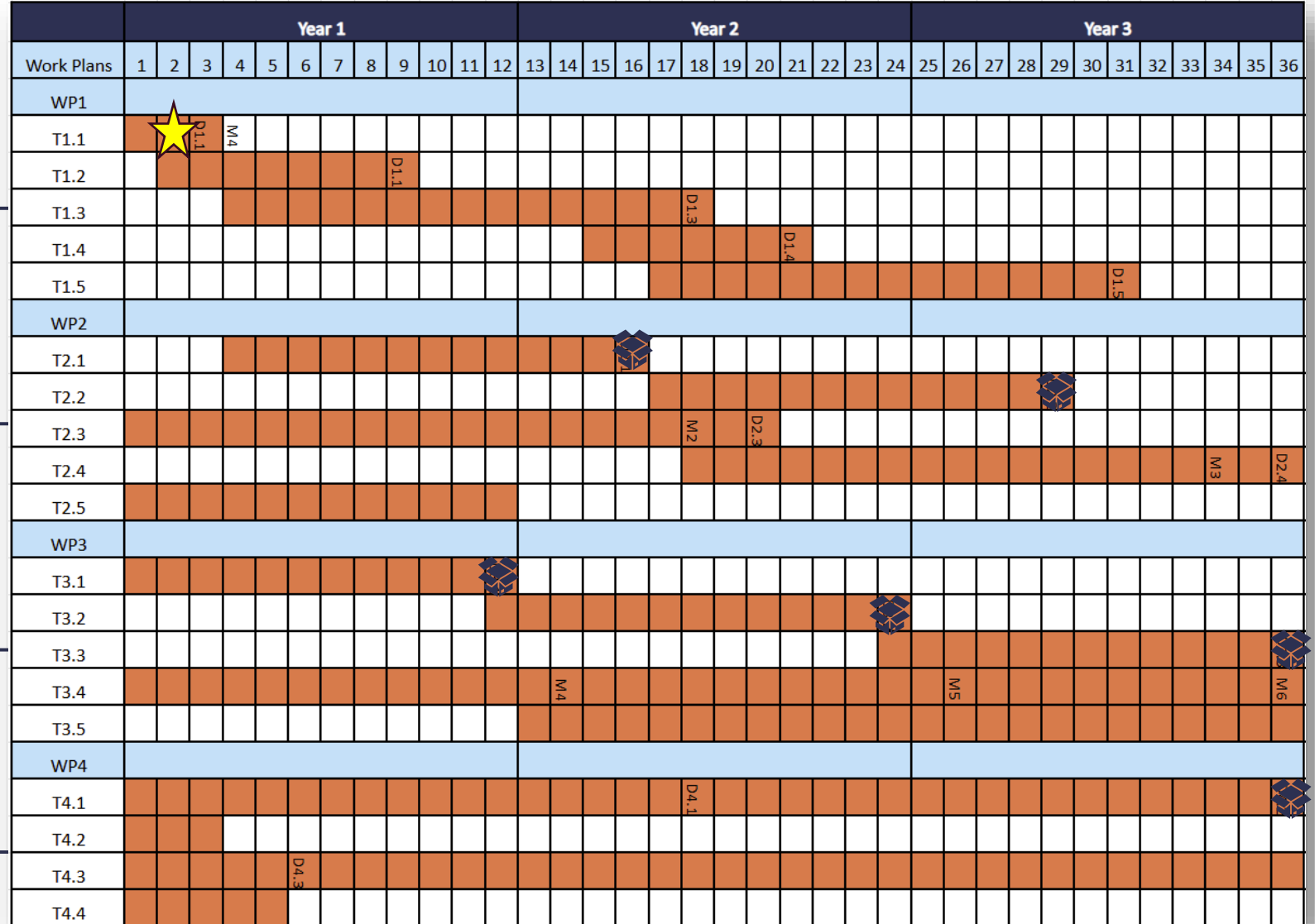
HERE!

1 Mobilizing the European DSOs to Support the Realization of Digital Twins

2 Outreach on Digital Twin Developments

3 Dissemination and Actions to Accelerate the Uptake of Digital Twins Across Europe

4 Project Management



DSO4DT Stakeholder Engagement

- DSO4DT will engage with a range of organisations working on digital twins

from existing Digital Twin projects, as well as policymakers.*

Relevant Stakeholders:

The logo for TwinEU, featuring the word "Twin" in a light blue font with a white star above the 'i', and "EU" in a darker blue font.The logo for T&D europe, with "T&D" in a large, light blue font and "europe" in a smaller, grey font below it.

WE WANT TO SPEAK WITH YOU ABOUT DIGITAL TWINS

The logo for entsoe, with the word "entsoe" in a dark blue font and a stylized blue and yellow 'e' at the end.The logo for ER EUROPE, with "ER" in a large, bold, black font and "EUROPE" in a smaller, black font below it.The logo for Enlit Europe, featuring a circular arrangement of yellow dots forming a ring around the word "Enlit" in a bold, black font, with "Europe" in a smaller, black font below it.

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*Stakeholder engagement will continuously be updated

list is not exhaustive.

Part 3: Q&A



Q&A



The End

