



HELIOS project launches the Final Release of its platform and components for the development of P2P Social Media services and Android-based apps

During 36-months, the HELIOS project has been working on the development of advanced modules, components and APIs to allow easier and faster creation of decentralized P2P social media apps by external communities of developers

Madrid. February 9, 2022. The project HELIOS, funded by the European Commission as part of its H2020 Programme, has reached the end of its funding period and announces the availability of the results and components built for enabling secure and decentralised functionalities that allow app developers to build their own social media apps for Android or another type of services based on HELIOS.

Since the beginning of the project in January 2019, HELIOS and its consortium have worked towards building a platform providing advanced components that could become a disruptive force for the European Social Media landscape and contribute to the Next Generation Internet initiative. In this regard, HELIOS Platform is laying the foundation for a new decentralised social network vision where users take back control of their data and content, with novel privacy and trust functionalities.

The HELIOS Platform has been built in a modular, open-source, and extensible manner to ensure that developers can easily create social media apps or services based on HELIOS. The **Core components** are at the heart of the system and take care of basic connectivity, security, and social networking functions developed by HELIOS, while the **Extension Modules** provide additional features on top of the HELIOS core components that can be used to build applications and services.

Core Components:

- **Communication Manager/Messaging:** Allows communication with other HELIOS users with basic messaging operations for direct and group chats.
- **Security & Privacy Manager:** Provides cryptographic functions and management to a key store for binding alias use for identity protection and access control for files.
- **Profile Manager:** Allows developers to build a flexible HELIOS profile with key-value storage and the necessary addition of attributes to complete the profile.
- **Contextual Ego Network Manager:** Provides access to the Contextual Ego Network (CEN), a multilayer pillar network centered on a specific user consisting of a principal node and several alters nodes to model the social ties among social media users and contexts.
- **Context Manager:** Handles context-related monitoring and reasoning for the user with a framework for implementing context types and context detection with core implementations and sensors.
- **Trust Manager:** Provides APIs to retrieve information about the trust scores of the relationship between a user and the alters in the CEN, based on the context of reference.
- **Personal Data Storage Manager:** API providing a storage abstraction for HELIOS applications for the configuration of different persistent storage options such as personal cloud storage or local device storage.

Extension Modules:

- **Neuro-behavioral classifier:** A set of algorithms for establishing trust relations and quality of the content generated and shared, based on the emotional response of users. Includes sentiment analysis, voice analysis, image and facial recognition.
- **Social Graph Mining Module:** Provides dynamic machine learning capabilities to HELIOS users for recommendations based on the specific context of the user.
- **Media Streaming:** Allows P2P streaming and media distribution functionalities with specific components for live streaming services, video call, video on demand distribution (VoD), file transfer for multimedia content, video player, and support for multiple connected users for guaranteeing the quality of experience.

www.helios-h2020.eu | www.helios-social.eu



- **Rewarding**: Determines the amount of HELIOS token for each user based on their daily activity to gamify the experience on social media apps and reward the user for its contribution to the entire community such as adding content, joining networks or checking in on a specific location.
- **Content-Aware Profiling Module**: Provides semantic analysis of HELIOS users image collections to facilitate the creation of profiles related to their interests.

HELIOS Platform and the modules, components, and APIs that it contains, have been tested through the creation of specific validation apps addressing different needs of social media users nowadays:

- **Winter App**. This is the latest App in the series of HELIOS Apps for testing modules from different partners, as well as the HELIOS Core Releases. Its predecessor AutumnApp was published with source codes and build instructions for HELIOS Challenge in September 2021 and for a ReachOut challenge in December. These two actions were a perfect starting point for developers who would like to create innovative social media based on HELIOS with their own look&feel.
- **MediaStreaming App**: The MediaStreaming application developed by Atos delivers media related functionalities such as: Peer to Peer (P2P) Video Call, Live Video Transmissions (supporting multiple video streaming formats: flat video streaming as well as 360-degree, File Sharing and Video Player.
- **helios.TALK App**: Delivers decentralized group communications allowing the management of contexts, user profiles, contacts, messages, private groups and forums, discovery of resources, and automatic profiling to allow personalized recommendations-with minimal disclosure of users' privacy'.
- **helios.VR App**: Delivers Virtual Reality (VR) authoring services for multi-playing VR experiences such as users interacting with virtual assets at specific locations like a museum.
- **Citizen Journalism (CJ) Report App**: Supports Citizen Journalists to use self-produced content anonymously in a decentralized P2P file system, and to store and share videos nor pictures taken with mobile devices.

As part of the sustainability strategy, HELIOS partners have signed a Memorandum of Understanding (MoU) for the creation of an open-source community called HELIOS Community intended to boost further joint research actions based on the knowledge, concepts, and technological achievements generated within the project and in particular, the HELIOS Platform.

Moreover, HELIOS established valuable synergies and collaborations with related projects and initiatives to amplify the impact of the project's results and identify potential shared strategies to promote the uptake of the results after the end of the funding period. Some that can be mentioned were done with [ARTICONF project](#), addressing issues of trust, time-criticality and democratization for a new generation of federated infrastructure, to fulfil the privacy, robustness, and autonomy related promises that proprietary social media platforms have failed to deliver so far, and [Streamer](#), a distributed open-source software project with contributors in a range of time zones from Boston to Wroclaw, Helsinki, Zug, London and Melbourne.

All the components are available for external developers at the HELIOS Platform website (<https://helios-social.com/>) and GitHub (<https://github.com/helios-h2020>)

For more information about the project visit: www.helios-h2020.eu

Follow HELIOS project on [Facebook](#) and [Twitter](#).

About HELIOS

HELIOS is an EU-funded project under the H2020 Programme with the Grant Agreement N° 825585, working on the development of a Context-aware Distributed and Decentralized Social Network Platform introducing novel concepts for social graph creation and management, which are grounded in trust and transparency.

www.helios-h2020.eu | www.helios-social.eu

