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<p>Title:</p> <h2 style="text-align: center;">D1.4: Consolidated use case implementation</h2>		
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<p>Abstract / Executive summary:</p> <p>This deliverable is the second version of HEADS use cases consolidated implementation. With respect to the KPIs defined in the revised version of D1.2, the development of HEADS IDE and the HEADS methodology (produced in WP5 by integrating contributions from WP2-3-4) the two use cases (Safe@Home by Tellu and NewsAsset by ATC) developed a number of use case oriented artefacts. Those software artefacts are the realization of the use case scenarios defined in D1.1 and revised in D1.2. HEADS IDE was utilized in its different versions as being provided by WP5 to the reference scenario. Besides the implementation of software assets defined in Y1 of the project, use case providers revised/updated the demonstrators/scenarios so as to covers as many KPIs as possible and thus to highlight HEADS innovations. It must be mentioned that both demonstrators are not only covering both the heterogeneity and distribution exposed by HEADS technologies, but all the KPIs defined in D1.2, and HEADS objectives and requirements defined in D1.1. Thus, use case demonstrators are complete HEADS realizations of envisioned achievements, ensuring efficient validations of HEADS innovative technologies. Use case demonstrators will steer the development activities until the end of the project.</p> <p>More specifically, the industrial use case from Tellu implemented in HEADS is a smart-home system for helping elderly people to stay home as long as possible (Section 3.1). The main purpose of the use-case, in addition to specify a system of industrial relevance, has been to assess the HEADS IDE capabilities of handling heterogeneous computing nodes and distribution of services (Section 3.2). Thus, it has focused on specifying a broad range of computing nodes spanning from small and very constrained platforms (Arduino, Raspberry PI, Intel Edison) to cloud resources with virtually unlimited capacity. In terms of distribution the use case has also focused on deploying different communication technologies spanning from wired sensor communication (e.g. I2C), via wireless (e.g. ZWave, WiFi, BLE) to communication with Internet protocols (e.g. TCP/IP, HTTP, MQTT). Eventually, it managed to specify a set of sensors to be included in the use case. Through this use-case, the HEADS IDE will demonstrate how the service developer and operator can work at an abstraction level that is convenient in terms of handling differences in the underlying platforms implementations and system distribution. Thus, the development and operation process will be facilitated and speed up (Section 3.4)</p> <p>The ATC use case is referring to the future computing continuum applied in the media domain. It is</p>		

composed of a wide set of heterogeneous platforms and promises to be an environment that will definitely affect the media industry in terms of creating, managing and exploiting trustworthy media items. Nowadays, interesting media info is out there in the digital world and can be possessed and exploited by utilizing a variation of nodes and software engineering practices like network nodes, gateways, smart-phones, cloud computing and service-oriented methods, etc. The challenge for NewsAsset platform as a complete media system is to catch up with this evolution and provide services that can handle the developing new situation in the media industry. HEADS innovations are envisioned to offer this opportunity to NewsAsset. HEADS IDE is offering the creation of a “HEADS news item” as the outcome of the analysis of data that are coming from different and heterogeneous resources (Section 4.1). The nodes could be social networks, mobile devices, existing news wires and sensor networks. A Complex Event Processing (CEP) hosted in a cloud infrastructure is used to perform the analysis of the raw data aggregated (Section 4.1.1). Alongside NewsAsset, the open source [Social Sensor Platform](#) that collects, processes, and aggregates big streams of social media data and multimedia to discover trends, events, influencers, and interesting media content is used. Social Sensor is tailored to utilise HEADS technology. It will therefore be adapted to a heterogeneous and distributed application (Section 4.1.2) that will be able to discover interesting media content from a variety of sources and forward it to NewsAsset core engine (Section 4.3).

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