MOBI

Building the new economy of movement

Electric Vehicle Grid Integration

Mobility Open Blockchain Initiative
EVGI Working Group
Version 1.0

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EVGI Working Group Acknowledgment

The issuance of this standard as a formal Mobility Open Blockchain Initiative (MOBI) standard was conducted by MOBI and its members.

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Foreword

MOBI (Mobility Open Blockchain Initiative) is a global smart mobility consortium established to accelerate the adoption of blockchain, distributed ledger, and related technologies in the mobility industry through the creation and promotion of standards.

The work of preparing standards is carried out through MOBI working groups. Each member of the consortium interested in a subject for which a working group has been established has the right to be represented and participate in that working group. Mobility providers, technology companies, governments, and NGOs, in liaison with MOBI, take part in this work.

The procedures used to develop this document and those intended for its further maintenance are described in the working group charter. In particular, the different approval criteria needed for the different types of MOBI documents should be noted. Approvals of MOBI Steering Committee and Board of Directors are obtained upon the final document release. Attention is drawn to the possibility that some of the elements of this document may be the subject of intellectual property rights. In accordance with MOBI IPLR policy, a 60 day review period is provided to the MOBI community to disclose any and all IP matters pertaining to this standard. MOBI shall not be held responsible for identifying any or all such rights. Details of any IP rights identified during the development of the document will be in the Introduction upon public release of this standard.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

The working group responsible for this document is the Electric Vehicle & Grid Integration (EVGI) Working Group.

Introduction

Electric vehicles are expected to dominate global roadways. Charging availability must not only be widespread, but also interoperable in order to reduce range anxiety and enable seamless (e)roaming. Systems for calculating, generating and managing carbon offsets must be scalable. As more EVs are used by households, new ways of storage and even interaction with the grid are made possible, such as selling energy back to the grid, and in the long run peer to peer services. Critically, as the number of EVs increases, the number of charging sessions will, in turn, increase significantly. The charging sessions and grid interactions generate a wide variety of data, which will reach enormous volumes. A disjointed response from utilities, charging infrastructure providers, automakers, and the manufacturers supporting them would produce a series of incompatible systems for managing that data. This lack of interoperability becomes problematic at scale.

For these systems to be interoperable, there must be standards that govern their structure and interactions. Without such standards, core functionality like identity, permissioning, and data sharing would exist in a walled garden, which necessitates integration costs, increases manual processes, disregards opportunities to support the grid with the help of electrified mobility assets and most importantly, reduces charging availability for electric vehicle drivers. Governments, utilities, and the mobility industry are well aware of the need for such standards, and have invested in their development over time. Standardization organizations like ISO, IEEE, and MOBI are working to produce standards that will ensure the interoperability, scalability, and security of systems that power charging sessions, manage energy exchange, carbon credit generation, and other initiatives.

For eMobility, the grid, and carbon offset markets, blockchains offer a variety of value propositions. At its core, blockchain provides a trust layer, which is key for eliminating manual processes and third party intermediaries. Ultimately, these blockchain

applications result in reduced costs, new revenue opportunities, and new services for players on all sides of the EVGI ecosystem. By providing a secure, immutable, singular source of truth, blockchains enable the orchestration of a secure and trusted marketplace where energy transactions can be facilitated without intermediaries through automated business logic in smart contracts.