



Trusted Digital Web Glossary (TDW Glossary): Self-Sovereign Identity (SSI) User Scenarios: *Erin Buys a Car in Sovronia (3 User Scenarios)*

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The publication of this document coincides with recent discussions (March-April 2021) about the definition of Self-Sovereign Identity in the TDW Glossary, and the need for a simple, practical, and easy-to-understand user scenario explaining Self-Sovereign Identity.

This document is neither a W3C, DIF, Sovrin Foundation, nor ToIP publication - unofficial, official, or otherwise.

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CHANGE HISTORY

Version 0.1

1. First version of the Erin Buys a Car user scenario

ABSTRACT

The purpose of this document is to describe a simple, practical, and easy-to-understand user scenario explaining Self-Sovereign Identity (SSI) as defined in the TDW Glossary¹.

The intended audience for this whitepaper is a broad range of professionals interested in furthering their understanding of Self-Sovereign Identity for use in software apps, agents, and services. This includes software architects, application developers, and user experience (UX) specialists; as well as people involved in a broad range of standards efforts related to decentralized identity, verified credentials, and secure storage.

The work documented here was performed under the auspices of the Trusted Digital Web project in the Hyperonomy Digital Identity Lab of Parallelspace Corporation.

This is neither a W3C, DIF, Sovrin Foundation, nor ToIP publication - unofficial, official, or otherwise.

CONTEXT

Purpose

The purpose of this document is to describe a simple, practical, and easy-to-understand user scenario explaining Self-Sovereign Identity (SSI) as defined in the TDW Glossary².

The publication of this document coincides with recent discussions (March-April 2021) about the definition of Self-Sovereign Identity in the TDW Glossary, and the need for a simple, practical, and easy-to-understand user scenario explaining Self-Sovereign Identity.

More specifically, this user scenario document was inspired by Steve Capell in a March 20, 2021, W3C CCG mailing list message where Steve stated:

However, sadly, I don't think it will help the policymaker that is not used to reading meta models. I usually have more success with storyboards that contrast two architectures with real examples. Policymakers don't need to "understand the architecture". They need to be able to conceptualize how it works through examples so that they can understand the policy impacts and opportunities.

Hopefully, this user scenario description represents the beginnings of an acceptable response.

Goals

The primary goal of this document is to provide an everyday, easy-to-understand, written example of how Self-Sovereign Identity can be used to:

1. identify people,
2. identify things, and
3. facilitate the purchase of a Thing by a Person.

¹ TDW Glossary. *What is SSI?* (Credit: <https://hyperonomy.com/2021/02/01/ssi-unconscious-contractions/>)

² TDW Glossary. *What is SSI?* (Credit: <https://hyperonomy.com/2021/02/01/ssi-unconscious-contractions/>)

One of the specific non-goals is to introduce the concept of Verified Credentials. That being said, an informed reader will quickly identify where Verified Credentials can be used in addition to Self-Sovereign Identity.

Intended Audience

The intended audience for this whitepaper is a broad range of professionals interested in furthering their understanding of Self-Sovereign Identity for use in software apps, agents, and services. This includes software architects, application developers, and user experience (UX) specialists; as well as people involved in a broad range of standards efforts related to decentralized identity, verified credentials, and secure storage.

Organization

This whitepaper contains the following sections:

- Context (this section)
- User Scenario 1: Erin Buys a Car from Carter's Cars with No Previous SSI Assigned
- User Scenario 2: Erin Buys a Car from Carter's Cars with a Dealer Acquired SSI for the Car
- User Scenario 3: Erin Buys a Car from Carter's Cars with an OEM Acquired SSI for the Car
- TDW Glossary: Digital Identity Neighborhood
- Conclusions
- APPENDIX A: Licenses

The structure for this whitepaper was inspired by and patterned after the Alice Buys A Car User Scenario³ in the HyperLedger Indy Getting Started Guide for Enterprise Architects and Developers (INDY GSG-EA) (https://github.com/mwherman2000/indy-gsg-ea/blob/master/python/doc/getting_started-enterprise.md#scenario-alice-buys-a-car).

³ Alice is Erin's sister.

USER SCENARIO 1: ERIN BUYS A CAR FROM CARTER'S CARS WITH NO PREVIOUS SSI ASSIGNED

The Erin Buys a Car Self-Sovereign Identity user story is described in the sections that follow.

This variation, User Scenario 1: Erin Buys a Car from Carter's Cars with No Previous SSI Assigned, addresses the scenario where neither:

- the Original Equipment Manufacturer (the car manufacturer), nor
- the car dealer (Carter's Cars)

had previously acquired a Delegated Self-Sovereign Identity (DSSI) for Erin's prospective new car.

User Scenario

1. Erin Amanda Lee Anderson is a (fictional) Person who lives in Sovron City in the province of Sovronia in Canada. Sovron City is a fictional city within the fictional Canadian province of Sovronia (province code SO).



Figure 1. Erin lives in Sovron City, Sovronia, Canada

(Credit: https://commons.wikimedia.org/wiki/File:Political_map_of_Canada.svg)

2. The province of Sovronia is the *local jurisdiction* for this user scenario.
3. Sovronia is a BYOSSI province: *Bring Your Own Self-Sovereignty* province. Citizens of Sovronia are very accustomed to acquiring an additional Self-Sovereign Identity as required to use Sovronia's citizen services as well as acquire many high-value assets where the jurisdiction requires a formal transfer of title as part of the asset purchase; for example, buying a car, buying a boat, buying a house, etc.
4. Everything in Sovronia is officially identified by a Self-Sovereign Identity (or Delegated Self-Sovereign Identity): Persons, Organizations, and Things.
5. For example, Erin owns and has control over the usage of one or more (likely several) Self-Sovereign Identities where Erin is the Subject.
6. Erin is the Digital Identity Owner (and, by default, undelegated Digital Identity Controller) of these identities.
7. Each uniquely identifiable Thing (aka non-fungible entity (NFE)) such as a car, refrigerator, original artwork, a pet, a boat, a house, etc. has one or more Delegated Self-Sovereign Identities associated with it where a Person such as Erin is the Digital Identity Controller of these identities.
8. Because the Subject of these identities is a Thing (NFE), these identities only have a Digital Identity Controller; they do not have a Digital Identity Owner.
9. In Sovronia, there are several reputable providers of Decentralized Digital Identity Services.
10. One of these Decentralized Digital Identity Services Providers is SOVRONA who issues Decentralized Identifiers using the well-known (but fictitious) SVRN Digital Identifier Method.
11. A Digital Identity (and, in turn, a Decentralized Identity, and a Self-Sovereign Identity) is composed of:
 - a. A Digital Identifier, and
 - b. Associated Digital Identity Data (aka a collection of Claims aka name-value pairs)
12. Neither:
 - the Original Equipment Manufacturer (the car manufacturer), nor
 - the car dealer (Carter's Cars)

had previously acquired a Delegated Self-Sovereign Identity (DSSI) for Erin's prospective new car.

User Story

13. Erin wants to buy a car - a baby blue Lotus Coupe - from Carter's Cars.
14. To purchase the car from Carter's Cars, Erin needs to:
 - a. Acquire a Driver's License valid in Erin's local jurisdiction (Erin doesn't currently have a Driver's License that is valid in Sovronia).
 - b. Purchase and accept possession of the Car.
15. To acquire a Driver's License valid in Erin's local jurisdiction, Erin needs to:
 - a. Acquire a Self-Sovereign Identity (SSI) to be used as part of her Driver's License – to relate or key the Driver's License to Erin personally.
 - b. Erin will serve as the Digital Identity Owner of the SSI credential used for Erin's Driver's License.

- c. As a Person resident in Sovronia, Erin has the right to exclusively and permanently exert control over the usage of the SSI's Personal Digital Identifier and, independently, the usage of any associated Personal Identity Data associated with the SSI's Personal Digital Identifier.
16. Before taking the Driver's Tests, Erin needs to acquire and hold the Personal Decentralized Identifier (PDID) to be used when the province issues Erin's new Sovronia Driver's License. The Personal Decentralized Identifier is issued to Erin in the form of a Self-Sovereign Identity.
17. The Self-Sovereign Identity is composed of a Personal Decentralized Identifier (PDID) plus Personal Digital Identity Data associated with the identifier.
18. An example of a PDID issued by SOVRONA for Erin (that conforms with the SVRN Digital Identifier Method specification) appears below.

DID:SVRN:PERSON:04900EEF-38E7-487E-8D6F-09D6C95D9D3E

19. Erin passes both her written and practical Driver's Tests and is issued a new Sovronia Driver's License⁴. Erin's PDID appears across the bottom of the Driver's License (Operator's License).



Figure 2. Erin's New Sovronia Driver's License (Operator's License)⁵

(Credit: Government of Alberta, Canada)

20. To purchase a car, Erin needs to acquire a Delegated Self-Sovereign Identity for the car Erin wants to purchase.

⁴ Side Note: Is the photo of a Driver's License a Subject or a Credential? As pictured, it's a Subject; that is, a Thing. The digital analog/representation of a Driver's License is a Digital Subject. The attributes of the Driver's License can be used as Claims. These claims can be composed into one or more Credentials.

(Credit: <https://twitter.com/mwherman2000/status/1191361058167853056>)

⁵ POP QUIZ: What is the DID (DID Subject) of the following Driver's License?

Answer: The Driver's License is a Thing and the DID for the Driver's License is DID:SVRN:LICENSE:999902-638

- a. Because the car is not a legal entity, the car cannot exert control over the usage of the car’s SSI Personal Digital Identifier and, independently, the usage of any associated Personal Identity Data associated with the car’s SSI Personal Digital Identifier. Hence, the car cannot serve as the Digital Identity Owner of its own (delegated) SSI credential.
 - b. In place of this, Erin will serve as the Digital Identity Controller for the car’s SSI credential.
21. Before closing on the purchase of the car and taking possession, Erin needs to acquire and hold a Decentralized Identifier (DID) to be used to uniquely identify the car when the province issues a new Sovronia Vehicle Registration Certificate to Erin binding ownership of the car to Erin as a person; that is, create a binding ownership (“controllership”) of the car (via the car’s DID in the car’s Delegated Self-Sovereign Identity) to Erin (via Erin’s PDID found in Erin’s Self-Sovereign Identity). The Decentralized Identifier is issued in the form of a Delegated Self-Sovereign Identity for the car.
 22. The Delegated Self-Sovereign Identity is composed of a Decentralized Identifier (DID) plus Digital Identity Data associated with the identifier.
 23. One of the Claims (name-value pairs) that makes up the car’s Digital Identity Data identifies Erin as the Digital Identity Controller using Erin’s PDID.
 24. An example of a DID issued by SOVRONA to Erin for the car (that conforms with the SVRN Digital Identifier Method specification) appears below.

DID:SVRN:VEHICLE:SCCLHHSC6ZHD20331

25. Erin purchases the car and is issued a new Sovronia Vehicle Registration Certificate. The Vehicle Registration Certificate verifiably binds the car’s DID from its Delegated Self-Sovereign Identity to Erin’s PDID from Erin’s Self-Sovereign Identity.


VEHICLE DESCRIPTION VEHICLE MAKE Lotus MODEL OR SERIES Exige Coupe VEHICLE STYLE 2 door VEHICLE IDENTIFICATION NUMBER (VIN) SCCLHHSC6ZHD20331 PRO-RATE NUMBER REGULATIONS BUS CAPACITY SPECIAL CONDITIONS MOTOR HOME SUPERSTRUCTURE / SECONDARY PARTS DESCRIPTION MAKE MODEL OR SERIES SERIAL NUMBER YEAR	SECTION 2 YEAR 1962 BODY COLOR M. Blue FUEL Gas LICENCED MASS kg UNIT NUMBER BUS CAPACITY	VEHICLE ACCESS CODE (VAC) 02332-1508 Sovronia Vehicle Registration Certificate Validation Number 86030661615 VALIDATION NUMBER APPEARING ON YOUR TAB DID:SVRN:VRC:86030661615 SECTION 1 LICENCE PLATE NO. ABCD1234 CLASS 3 LICENCED MASS kg EXPIRY DATE (Y/M/D) 1986/04/30 TYPE OF OPERATION Passenger REGISTRATION NUMBER 044-457158 **ISSUED** 1985/06/26 IF LEASED VEHICLE, LEASING COMPANY NAME AND MVID NAME & ADDRESS OF REGISTRANT(S) ANDERSON, Erin Amanda Jane 3 Floor Brownlee Bldg 10365 97 St NW Sovrin City, SO T5J 3W7 TYPE: INDIVIDUAL CLIENT'S MVID 0095-23341	MOTOR VEHICLES DIVISION ISSUING OFFICE 0000-00521 VALIDATED 1985/06/26 DID:SVRN:VEHICLE:SCCLHHSC6ZHD20331 DID:SVRN:PERSON:04900EEF-38E7-487E-8D6F-09D6C95D9D3E 
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Figure 3. Erin’s New Sovronia Vehicle Registration Certificate

26. Erin drives off in Erin’s newly acquired Baby Blue Lotus Coupe. Below is a photo of Erin’s new Baby Blue Lotus Coupe.



Figure 4. Erin's Baby Blue Lotus Coupe

(Credit: <https://www.classic.com/veh/1962-lotus-elite-1318-LWYXrkn/>)

USER SCENARIO 2: ERIN BUYS A CAR FROM CARTER'S CARS WITH A DEALER ACQUIRED SSI FOR THE CAR

The Erin Buys a Car Self-Sovereign Identity user story is described in the sections that follow.

This variation, User Scenario 2: Erin Buys a Car from Carter's Cars with a Dealer Acquired SSI for the Car, addresses the scenario where:

- The car dealer (Carter's Cars) acquired and is the Digital Identity Controller for the original Delegated Self-Sovereign Identity (DSSI) for Erin's prospective new car, and
- The Original Equipment Manufacturer (the car manufacturer) had not acquired a DSSI for the car and has never been the Digital Identity Controller of the DSSI for the car.

User Scenario

1. Same as Scenario 1 with the following exceptions.
2. The car dealer (Carter's Cars) acquired and is the Digital Identity Controller for the original Delegated Self-Sovereign Identity (DSSI) for Erin's prospective new car
3. The Original Equipment Manufacturer (the car manufacturer) had not acquired a DSSI for the car and is also not the Digital Identity Controller of the DSSI for the car (and never was the Digital Identity Controller).

User Story

The descriptions where this User Scenario 2 differs from User Scenario 1: Erin Buys a Car with No Previous SSI Assigned are highlighted in *italic*. All other descriptions remain unchanged.

13. Erin wants to buy a car - a baby blue Lotus Coupe - from Carter's Cars.
14. To purchase the car from Carter's Cars, Erin needs to:
 - c. *Acquire a Driver's License valid in Erin's local jurisdiction (Erin doesn't currently have a Driver's License that is valid in Sovronia).*
 - d. Purchase and accept possession of the Car.
15. To acquire a Driver's License valid in Erin's local jurisdiction, Erin needs to:
 - d. *Acquire a Self-Sovereign Identity (SSI) to be used as part of her Driver's License – to relate or key the Driver's License to Erin personally.*
 - e. *Erin will serve as the Digital Identity Owner of the SSI credential used for Erin's Driver's License.*
 - f. *As a Person resident in Sovronia, Erin has the right to exclusively and permanently exert control over the usage of the SSI's Personal Digital Identifier and, independently, the usage of any associated Personal Identity Data associated with the SSI's Personal Digital Identifier.*
16. Before taking the Driver's Tests, Erin needs to acquire and hold the Personal Decentralized Identifier (PDID) to be used when the province issues Erin's new Sovronia Driver's License. The Personal Decentralized Identifier is issued to Erin in the form of a Self-Sovereign Identity.

17. The Self-Sovereign Identity is composed of a Personal Decentralized Identifier (PDID) plus Personal Digital Identity Data associated with the identifier.
18. An example of a PDID issued by SOVRONA for Erin (that conforms with the SVRN Digital Identifier Method specification) appears below.

DID:SVRN:PERSON:04900EEF-38E7-487E-8D6F-09D6C95D9D3E

19. Erin passes both her written and practical Driver's Tests and is issued a new Sovronia Driver's License⁶. Erin's PDID appears across the bottom of the Driver's License (Operator's License).



Figure 5. Erin's New Sovronia Driver's License (Operator's License)⁷

(Credit: Government of Alberta, Canada)

20. The car that Erin wants to purchase already has a Delegated Self-Sovereign Identity associated with it that was acquired by Carter's Cars, the car dealer. (Carter's Cars would have acquired the DSSI from SOVRONA in a manner similar to the steps Erin followed in User Scenario 1.). Before the purchase by Erin, Carter's Cars is the Digital Identity Controller for the car's SSI credential. Carter's Cars will also have previously acquired its own Self-Sovereign Identity and associated DID:

DID:SVRN:ORG:033BBA02-B5DE-4535-B618-7FFF30E8030C

⁶ Side Note: Is the photo of a Driver's License a Subject or a Credential? As pictured, it's a Subject; that is, a Thing. The digital analog/representation of a Driver's License is a Digital Subject. The attributes of the Driver's License can be used as Claims. These claims can be composed into one or more Credentials.

(Credit: <https://twitter.com/mwherman2000/status/1191361058167853056>)

⁷ POP QUIZ: What is the DID (DID Subject) of the following Driver's License?

Answer: The Driver's License is a Thing and the DID for the Driver's License is DID:SVRN:LICENSE:999902-638

21. On closing on the purchase of the car and taking possession, Carter's Cars needs to transfer the Digital Identity Controller role for the car's DSSI to Erin at the same time the province issues a new Sovronia Vehicle Registration Certificate to Erin binding ownership of the car to Erin as a person; that is, create a binding ownership ("controllership") of the car (via the car's DID in the car's Delegated Self-Sovereign Identity) to Erin (via Erin's PDID found in Erin's Self-Sovereign Identity).
22. The Delegated Self-Sovereign Identity is composed of a Decentralized Identifier (DID) plus Digital Identity Data associated with the identifier.
23. One of the Claims (name-value pairs) that makes up the car's Digital Identity Data identifies Erin as the Digital Identity Controller using Erin's PDID.
24. An example of a DID issued by SOVRONA to Erin for the car (that conforms with the SVRN Digital Identifier Method specification) appears below.

DID:SVRN:VEHICLE:SCCLHHSC6ZHD20331

25. Erin purchases the car and is issued a new Sovronia Vehicle Registration Certificate. The Vehicle Registration Certificate verifiably binds the car's DID from its Delegated Self-Sovereign Identity to Erin's PDID from Erin's Self-Sovereign Identity.


<p>VEHICLE DESCRIPTION VEHICLE MAKE: Lotus MODEL OR SERIES: Exige Coupe VEHICLE STYLE: 2 door VEHICLE IDENTIFICATION NUMBER (VIN): SCCLHHSC6ZHD20331 PRO-RATE NUMBER: [blank] REGULATIONS: [blank] BUS CAPACITY: [blank] SPECIAL CONDITIONS: [blank]</p>	<p>SECTION 2 YEAR: 1962 VEHICLE ACCESS CODE (VAC): 02332-1508 BODY COLOR: M. Blue FUEL: Gas</p>	<p>Sovronia Vehicle Registration Certificate</p>	<p>Validation Number: 86030661615 VALIDATION NUMBER APPEARING ON YOUR TAB DID:SVRN:VRC:86030661615</p>
<p>SECTION 1</p> <p>LICENCE PLATE NO. ABCD1234 CLASS 3 LICENCED MASS kg EXPIRY DATE (Y/M/D) 1986/04/30 TYPE OF OPERATION Passenger REGISTRATION NUMBER 044-457158 **ISSUED** 1985/06/26</p>		<p>IF LEASED VEHICLE, LEASING COMPANY NAME AND MVID: [blank]</p> <p>TYPE: INDIVIDUAL CLIENT'S MVID: 0095-23341</p>	
<p>MOTOR HOME SUPERSTRUCTURE / SECONDARY PARTS DESCRIPTION MODEL OR SERIES: [blank]</p> <p>SERIAL NUMBER: [blank] YEAR: [blank]</p>		<p>NAME & ADDRESS OF REGISTRANT(S): ANDERSON, Erin Amanda Jane 3 Floor Brownlee Bldg 10365 97 St NW Sovrin City, SO T5J 3W7</p>	
<p>SIGNATURE(S): [blank] REGISTRAR MOTOR VEHICLES DIVISION</p>		<p>MOTOR VEHICLES DIVISION ISSUING OFFICE: 0000-00521 VALIDATED: 1985/06/26</p>	
			
		<p>DID:SVRN:VEHICLE:SCCLHHSC6ZHD20331 DID:SVRN:PERSON:04900EEF-38E7-487E-8D6F-09D6C95D9D3E</p>	

Figure 6. Erin's New Sovronia Vehicle Registration Certificate

26. Erin drives off in Erin's newly acquired Baby Blue Lotus Coupe. Below is a photo of Erin's new Baby Blue Lotus Coupe.



Figure 7. Erin's Baby Blue Lotus Coupe

(Credit: <https://www.classic.com/veh/1962-lotus-elite-1318-LWYXrkn/>)

USER SCENARIO 3: ERIN BUYS A CAR FROM CARTER'S CARS WITH AN OEM ACQUIRED SSI FOR THE CAR

The Erin Buys a Car Self-Sovereign Identity user story is described in the sections that follow.

This variation, User Scenario 3: Erin Buys a Car from Carter's Cars with an OEM Acquired SSI for the Car, addresses the scenario where:

- The Original Equipment Manufacturer (the car manufacturer) had acquired and *was* the Digital Identity Controller for the original Delegated Self-Sovereign Identity (DSSI) for the car, and
- The OEM subsequently (and previously) transferred the Digital Identity Controller role for the DSSI for the car to Carter's Cars.

User Scenario

1. Same as Scenario 1 with the following exceptions.
2. The Original Equipment Manufacturer (the car manufacturer) had acquired and was the Digital Identity Controller for the original Delegated Self-Sovereign Identity (DSSI) for the car
3. The OEM subsequently (and previously) transferred the Digital Identity Controller role for the DSSI for the car to Carter's Cars.

User Story

The descriptions where this User Scenario 3 differs from User Scenario 1: Erin Buys a Car with No Previous SSI Assigned are highlighted in *italic*. All other descriptions remain unchanged.

13. Erin wants to buy a car - a baby blue Lotus Coupe - from Carter's Cars.
14. To purchase the car from Carter's Cars, Erin needs to:

- e. Acquire a Driver's License valid in Erin's local jurisdiction (Erin doesn't currently have a Driver's License that is valid in Sovronia).
 - f. Purchase and accept possession of the Car.
15. To acquire a Driver's License valid in Erin's local jurisdiction, Erin needs to:
- g. Acquire a Self-Sovereign Identity (SSI) to be used as part of her Driver's License – to relate or key the Driver's License to Erin personally.
 - h. Erin will serve as the Digital Identity Owner of the SSI credential used for Erin's Driver's License.
 - i. As a Person resident in Sovronia, Erin has the right to exclusively and permanently exert control over the usage of the SSI's Personal Digital Identifier and, independently, the usage of any associated Personal Identity Data associated with the SSI's Personal Digital Identifier.
16. Before taking the Driver's Tests, Erin needs to acquire and hold the Personal Decentralized Identifier (PDID) to be used when the province issues Erin's new Sovronia Driver's License. The Personal Decentralized Identifier is issued to Erin in the form of a Self-Sovereign Identity.
17. The Self-Sovereign Identity is composed of a Personal Decentralized Identifier (PDID) plus Personal Digital Identity Data associated with the identifier.
18. An example of a PDID issued by SOVRONA for Erin (that conforms with the SVRN Digital Identifier Method specification) appears below.

`DID:SVRN:PERSON:04900EEF-38E7-487E-8D6F-09D6C95D9D3E`

19. Erin passes both her written and practical Driver's Tests and is issued a new Sovronia Driver's License⁸. Erin's PDID appears across the bottom of the Driver's License (Operator's License).



Figure 8. Erin's New Sovronia Driver's License (Operator's License)⁹

(Credit: Government of Alberta, Canada)

20. The car that Erin wants to purchase already has a Delegated Self-Sovereign Identity associated with it that was acquired by the OEM of the car. Carter's Cars would have acquired control of the DSSI from the OEM when it accepted the car into its inventory from the OEM; that is, Carter's Cars becomes the Digital Identity Controller of the Delegated Self-Sovereign Identity for the car (and its associated DID). Before the purchase by Erin, Carter's Cars is the Digital Identity Controller for the car's SSI credential. Carter's Cars will also have previously acquired its own Self-Sovereign Identity and associated DID:

DID:SVRN:ORG:033BBA02-B5DE-4535-B618-7FFF30E8030C

21. On closing on the purchase of the car and taking possession, Carter's Cars needs to transfer the Digital Identity Controller role for the car's DSSI to Erin at the same time the province issues a new Sovronia Vehicle Registration Certificate to Erin binding ownership of the car to Erin as a person; that is, create a binding ownership ("controllership") of the car (via the car's DID in the car's Delegated Self-Sovereign Identity) to Erin (via Erin's PDID found in Erin's Self-Sovereign Identity).

⁸ Side Note: Is the photo of a Driver's License a Subject or a Credential? As pictured, it's a Subject; that is, a Thing. The digital analog/representation of a Driver's License is a Digital Subject. The attributes of the Driver's License can be used as Claims. These claims can be composed into one or more Credentials.

(Credit: <https://twitter.com/mwherman2000/status/1191361058167853056>)

⁹ POP QUIZ: What is the DID (DID Subject) of the following Driver's License?

Answer: The Driver's License is a Thing and the DID for the Driver's License is DID:SVRN:LICENSE:999902-638

- 22. The Delegated Self-Sovereign Identity is composed of a Decentralized Identifier (DID) plus Digital Identity Data associated with the identifier.
- 23. One of the Claims (name-value pairs) that makes up the car's Digital Identity Data identifies Erin as the Digital Identity Controller using Erin's PDID.
- 24. An example of a DID issued by SOVRONA to Erin for the car (that conforms with the SVRN Digital Identifier Method specification) appears below.

DID:SVRN:VEHICLE:SCCLHHSC6ZHD20331

- 25. Erin purchases the car and is issued a new Sovronia Vehicle Registration Certificate. The Vehicle Registration Certificate verifiably binds the car's DID from its Delegated Self-Sovereign Identity to Erin's PDID from Erin's Self-Sovereign Identity.

VEHICLE DESCRIPTION VEHICLE MAKE Lotus		SECTION 2 YEAR 1962	VEHICLE ACCESS CODE (VAC) 02332-1508	Sovronia Validation Number 86030661615		VALIDATION NUMBER APPEARING ON YOUR TAB 86030661615
MODEL OR SERIES Exige Coupe	BODY COLOR M. Blue	FUEL Gas	Vehicle Registration Certificate DID:SVRN:VRC:86030661615			
VEHICLE STYLE 2 door	LICENCED MASS kg		SECTION 1			
VEHICLE IDENTIFICATION NUMBER (VIN) SCCLHHSC6ZHD20331	UNIT NUMBER	LICENCE PLATE NO. CLASS ABCD1234 3		LICENCED MASS kg		
PRO-RATE NUMBER	REGULATIONS	BUS CAPACITY	EXPIRY DATE (Y/M/D) 1986/04/30	TYPE OF OPERATION Passenger		
SPECIAL CONDITIONS		REGISTRATION NUMBER 044-457158		IF LEASED VEHICLE, LEASING COMPANY NAME AND MVID		
MOTOR HOME SUPERSTRUCTURE / SECONDARY PARTS DESCRIPTION MAKE MODEL OR SERIES		NAME & ADDRESS OF REGISTRANT(S): ANDERSON, Erin Amanda Jane 3 Floor Brownlee Bldg 10365 97 St NW Sovrin City, SO T5J 3W7		TYPE: INDIVIDUAL CLIENT'S MVID 0095-23341		
SERIAL NUMBER	LICENCE PLATE NO. CLASS ABCD1234 3	MOTOR VEHICLES DIVISION ISSUING OFFICE 0000-00521		VALIDATED 1985/06/26		
YEAR	EXPIRY DATE (Y/M/D) 1986/04/30	SIGNATURE(S) Sovronia		QR CODE		
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Figure 9. Erin's New Sovronia Vehicle Registration Certificate

- 26. Erin drives off in Erin's newly acquired Baby Blue Lotus Coupe. Below is a photo of Erin's new Baby Blue Lotus Coupe.



Figure 10. Erin's Baby Blue Lotus Coupe

(Credit: <https://www.classic.com/veh/1962-lotus-elite-1318-LWYXrkn/>)

TDW GLOSSARY: DIGITAL IDENTITY NEIGHBORHOOD

The following TDW Glossary neighborhood lists all of the key terms used in this user scenario and depicts all (or most) of their inter-relationships.

TDW Glossary 0.17: Erin Buys a Car Neighborhood

Decentralized Identity Domain (Layer 4) - based on accepted Decentralized Identity themes

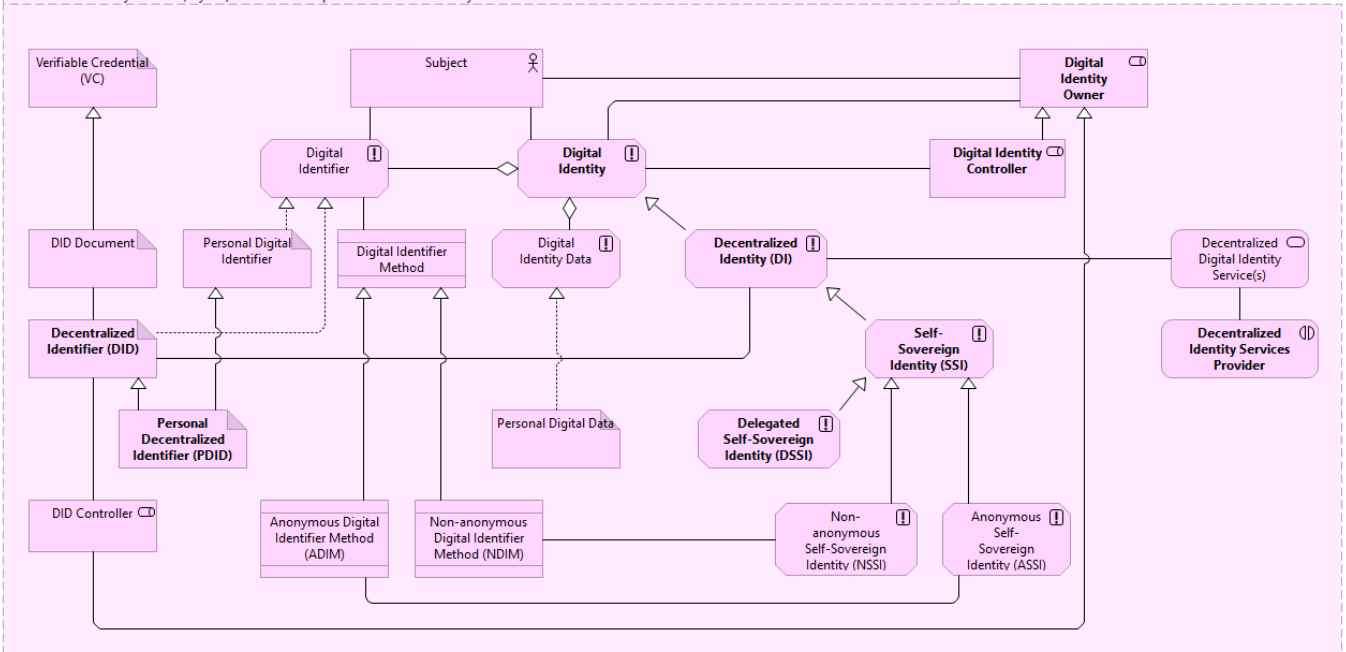


Figure 11. TDW Glossary: Digital Identity Neighborhood

CONCLUSION

If I have seen further, it is by standing on the shoulders of Giants.

[Issac Newton, 1675]

The purpose of this document is to describe a simple, practical, and easy-to-understand user scenario explaining Self-Sovereign Identity as defined in the TDW Glossary¹⁰.

The next steps are to publish this user scenario for broader distribution, feedback, and refinement.

Acknowledgments

This user scenario document was inspired by Steve Capell in a March 20, 2021, W3C CCG mailing list message where Steve stated:

However, sadly, I don't think it will help the policymaker that is not used to reading meta models. I usually have more success with storyboards that contrast two architectures with real examples. Policymakers don't need to "understand the architecture". They need to be able to conceptualize how it works through examples so that they can understand the policy impacts and opportunities.

Hopefully, this is the beginning of an acceptable response.

The responsibility for any errors or omissions lies with me alone.

¹⁰ TDW Glossary. *What is SSI?* (Credit: <https://hyperonomy.com/2021/02/01/ssi-unconscious-contractions/>)



APPENDICES

APPENDIX A – LICENSES

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