# W3C Blockchain Use Cases

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# Abstract

A blockchain is a … . The use cases outlined here are provided in order to make progress toward possible future standardization and interoperability of blockchains and ledgers. The use cases in this document focus on concrete scenarios that the technology defined by the group should address.

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# Introduction

A blockchain is a … . The use cases outlined here are provided in order to make progress toward possible future standardization and interoperability of blockchains and ledgers. The use cases in this document focus on concrete scenarios that the technology defined by the group should address.

The W3C Blockchain Community Group at the W3C is investigating the requirements around blockchains and decentralized ledgers. The goal of the Community Group is to determine if there is a sufficient understanding and need to merit the creation of a W3C Working Group to develop Recommendations in this space.

## Use Case Model

This document presents an aggregate use case model, comprised of Needs, Roles, Tasks, Sequences, and Interactions. Taken together, these models define the use cases that the Blockchain Community Group will address.

User needs define the problem space that Blockchains and Decentralized Ledgers address. User Roles specify the roles different entities play when interacting with Blockchains. Tasks define the functions users can accomplish and sequences demonstrate how tasks might be realized by interactions between entities over time.

As with all models, this use case model is neither exhaustive nor complete. The listed uses cannot exhaustively capture all possible use cases. Similarly, the models do not completely characterize the use cases represented. However, the combined model provides specific, coherent guidance for the work ahead.

# User Roles

There are four roles supported by DLTs: Role 1, Role 2, Role 3, and Role 4.

**Role 1**

The entity that ...

**Role 2**

The entity that...

# User Needs

Blockchains address user needs in a number of key domains:

## Domain #1

# User Tasks

Use cases are often used as a driver for requirements. While the users of DLTs have needs across many domains, the tasks associated with those needs span the domains. This section summarizes those tasks, as well as requirements related to the tasks, and maps the tasks and requirements back to the associated needs.

We may want to integrate these use cases as well: <https://image-store.slidesharecdn.com/bbf93c69-38c2-4e6e-bf98-b20335d70e1d-original.jpeg>

6 Categories of Trust around personal data transactions (adrian)

* identifying the person that is the subject of the data,
* identifying the user requesting person's data,
* recording and auditing the authorization to release the person's data,
* establishing the authenticity of the data that is being released,
* paying the service that offered the personal data,
* and auditing that the shared data was used as expected.

Each of these six could be a different blockchain and a different standard.

More use cases:

* for wallets, we want some way to store and opporate on keys in a secure way in the client. I believe web cryto is working on this. Will the web crypto group's APIs suffice for wallets? (boazsender)
* for natural disasters/emergency skill systems: running a ledger with no "servers"- distributed networking. Network discovery/mngment from the browser, or maybe over BLE? (boazsender)
* verify a block is genuine inside a blockchain from a web application (brunoj)
* anonymised deterministic passport real-time status validation on travel (dcosta72)
* (harry) Access to bitcoin wallet securely in the browser for payments
* Standardized REST API for blockchain access using normal JSON (harry)
* hyper system centralized and de-centralized DB(permissioned) (jay)
* rights management, trust management on WEB (jay)
* WOT related BC components (jay)
* Checking to see if a doctor has their license (or has been debarred) (manu)
* Checking to see if an IBAN number has been placed on a government watchlist (manu)
* Ensuring that a refugee that is onboarded at one camp can recover their refugee status determination paperwork. (manu)
* Preventing fraud in the insurance industry (by registering insurance claims on a blockchain / shared database) (manu)
* Seeing if a car insurance claim has already been processed (fraud) (manu)
* Seeing if a digital coupon has already been redeemed (coupon fraud) (manu)
* that they say they do (manu) Seeing if someone has the credentials (training/education)
* standardized data model for expressing primitives off of blockchain (returned when using a REST API) (manu)
* verifying if an emergency responder is currently authorized to be onsite (manu)
* calculating Weighted Centrality (mountie)
* Blockchain use by the Music industry: <https://medium.com/cuepoint/how-the-blockchain-can-change-the-music-industry-part-2-c1fa3bdfa848#.m462v6ppa> (renato)
* Things communicating within IoT (Marta)
* Tracking data that's shared on the Web, and measure who's accessing it (Marta)
* Clearing and settlement processing of digital ticket related services in passenger transportation service and logistics (Ian Shim)
* Striking a balance between Privacy and legal surveillance along with right to be forgotten (Harsh Patel)
* Putting down legal delimitation for ownership and custodianship of data holded by providers. (Harsh Patel)
* Ensuring public policy reaches grass root and enabling better public services. (Harsh Patel)

# User Sequences

The transaction examples in this section describe basic ways in which DLTs might be used. They are not meant to be architecturally constraining. Instead, they are meant to help illustrate the basic way it *could* be done in a typical interaction. Again - please remember that it is just an example, and should not be thought of as the canonical way such an DLT environment must be implemented.

# Specific Real World Examples

Interaction models describe a complete story where only part of the story is applicable to the User Tasks or User Sequences in this document. They help paint a picture of the sort of environment that DLT technology will operate within.