

Payment Agent

A transaction phase-based proposal

This document is a proposal for a more transaction phase-based explanation of the Payment Agent architecture being created by the W3C Web Payments Interest Group. This document is experimental and is not officially sanctioned or supported by the Web Payments IG in any way.

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The Payment Agent

A payment agent is a software program that executes payment transactions on behalf of an entity such as a person, merchant, or organization. It is built using Web technology, and can be deployed online, in brick-and-mortar settings, and anywhere that has access to an Internet connection. It can operate in both online and offline modes.

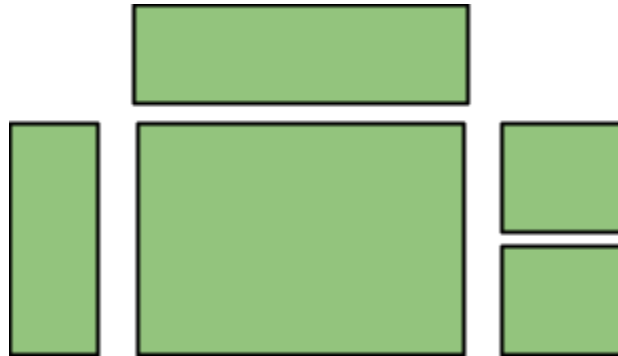


Figure 1: High-level Diagram of Payment Agent

Features

Input <ul style="list-style-type: none">• Touch• Keyboard• Voice• Geolocation / Geofencing Output <ul style="list-style-type: none">• Screen / HTML5• Voice• Vibration	Security <ul style="list-style-type: none">• Biometric (fingerprint, voice)• Secure Element / Hardware Security Module• Password / PIN• Digital Signatures Communication <ul style="list-style-type: none">• WebIDL API• Near-field Communication• Bluetooth Low Energy• TCP/IP / HTTP / REST
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Phase 1: Merchant Expresses an Offer of Sale

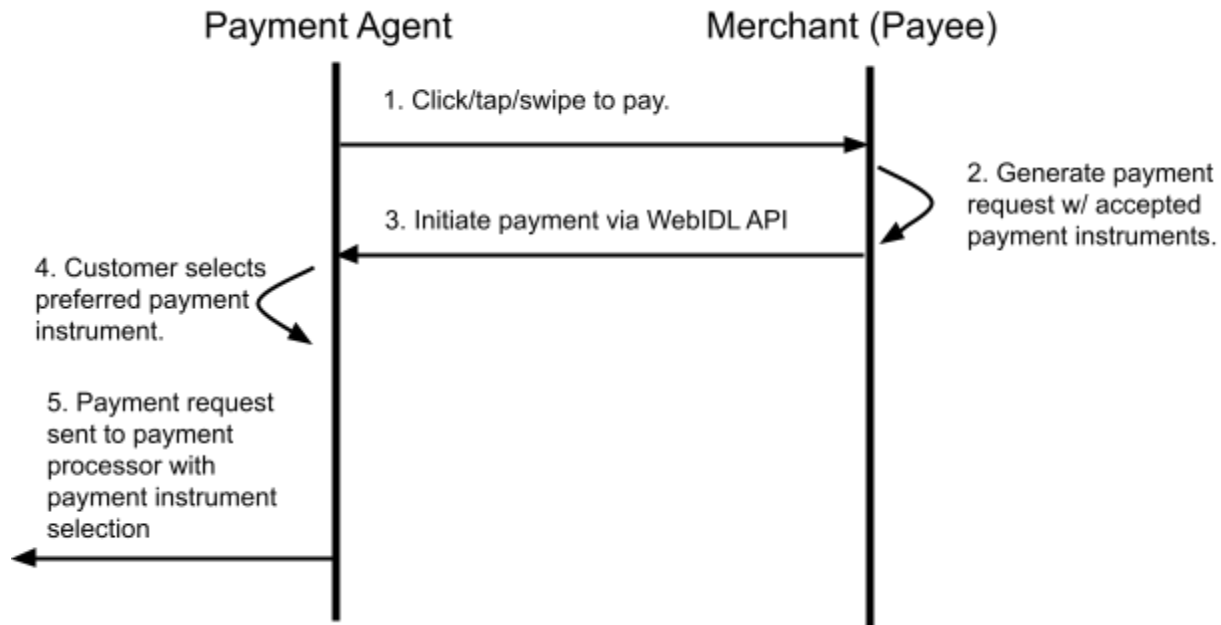
[Look at phase 3 for an example of what would go in this section]

Phase 2: Payment Initiation / Identity Credential Transmission

[Look at phase 3 for an example of what would go in this section]

Phase 3: Payment Instrument Negotiation / Payment Request

The third phase of a Web Payments transaction is concerned with the selection of a payment instrument and the transmission of the payment request to the customer's payment processor.



Use Cases

- [Purchase Request](#)
- [Choice of Payment Instrument](#)

Technologies Used

Input Used in step #1 to initiate the flow and step #4 to make a selection. <ul style="list-style-type: none">• Touch• Keyboard / Mouse Output Used in step #1 and #4 <ul style="list-style-type: none">• Screen / HTML5• Voice	Security Used in step #4 <ul style="list-style-type: none">• Biometric (fingerprint, voice)• Password / PIN Communication Used in step #1, #3, and #5 <ul style="list-style-type: none">• WebIDL API• Near-field Communication• Bluetooth Low Energy• TCP/IP / HTTP / REST
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Detailed Flow

1. The customer initiates the process of paying by using an input device such as a keyboard, mouse, or touchscreen to notify the payee that they would like to purchase a good or service.
2. The payee generates a payment request object which includes a list of the goods/services being purchased, the acceptable payment instruments, and the price associated with each payment instrument.
3. The purchase process is initiated via a WebIDL call in the Payment Agent. This call may be triggered over NFC, BLE, or a REST API call (which would carry the payment request payload).
4. Using the customer's device, or a payee-provided device, the customer selects which payment instrument they'd like to use via an input device like a keyboard, mouse, touchscreen, or voice.
5. The payment request is transmitted to the payer's payment processor over HTTP using the payment processor payment initiation REST API.

Phase 4: Submission of Payment to Payment Processor

[Look at phase 3 for an example of what would go in this section]

Phase 5: Delivery of Proof of Payment to Merchant

[Look at phase 3 for an example of what would go in this section]

Phase 6: Payment Clearing/Settlement

[Look at phase 3 for an example of what would go in this section]