



Kusama Treasury Report

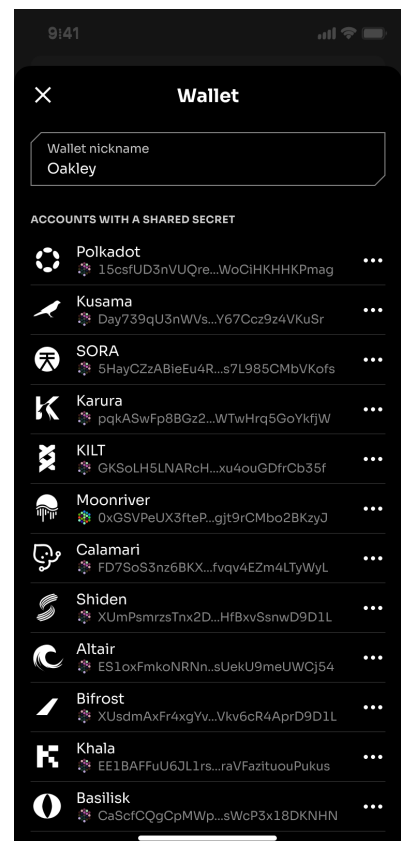
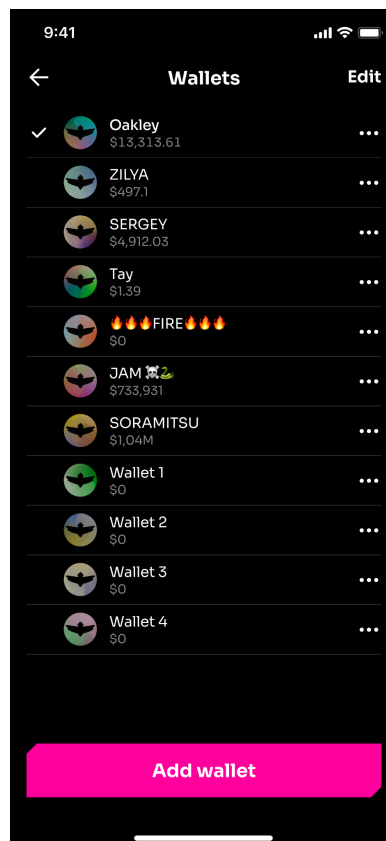
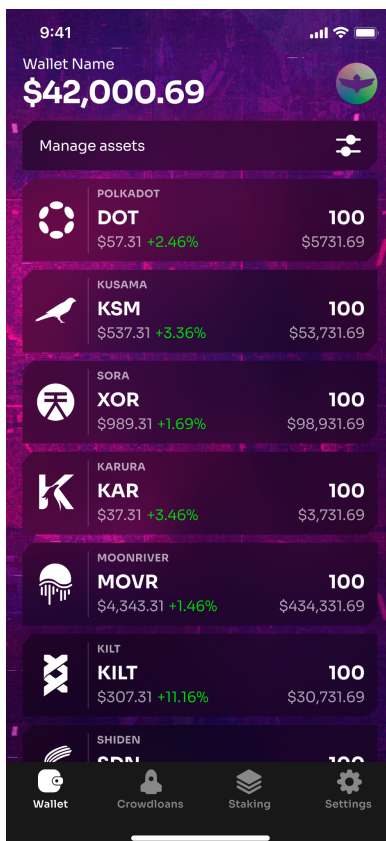
Fearless Wallet: Multi-asset & networks support

Proponent:

FyLYnuNoMAVkv1VZMMGZFHDPhgQQm1916fCon1CqNt2aXbX (SORAMITSU, Kusama)

Date: April 2022

Short description:



- **Add support of META-accounts:** In a META-account one private key will be used to generate accounts for each network by default, and users can replace accounts for each network individually inside a META-account.



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- **Multi-asset support:** The Mobile app will be connected to all supported Substrate networks and the UI will allow users to manage utility tokens & features without switching to separate accounts and/or changing networks.
 - **New networks:** This proposal covers multi-assets in terms of **Polkadot**, **Kusama**, and **Statemine** (including Westmint) networks. Other networks (e.g. parachains) will be integrated along with parachain teams, or added by the Fearless Wallet team without any grant if the integration process is straightforward, with reuse of default Substrate pallets.
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Overall statuses of the development progress:

#	Description	iOS status	Android status	Comments
1	Architecture & Libraries features:			
1.1.	<i>Adapt Fearless Wallet for adding custom networks support</i>			
	New database model implementation	Done	Done	https://github.com/soramitsu/fearless-Android/blob/master/core-db/src/main/java/jp/co/soramitsu/core_db/model/chain/MetaAccountLocal.kt https://github.com/soramitsu/fearless-iOS/tree/master/fearless/Common/Storage/UserDataModel.xcdatamodeld/MultiassetUserDataModel.xcdatamodel
	New secret store implementation	Done	Done	https://github.com/soramitsu/fearless-Android/blob/master/common/src/main/java/jp/co/soramitsu/common/data/secrets/v2/SecretStoreV2.kt https://github.com/soramitsu/fearless-iOS/blob/master/fearless/Common/Model/KeystoreTag.swift
	Users migration	Done	Done	https://github.com/soramitsu/fearless-Android/blob/master/core-db/src/main/java/jp/co/soramitsu/core_db/migrations/V2Migration



				kt https://github.com/soramitsu/fearless-iOS/blob/master/fearless/Common/Migration/UserStorage/SingleToMultiassetMigrationPolicy.swift
	Database migration	Done	Done	https://github.com/soramitsu/fearless-Android/blob/master/core-db/src/main/java/jp/co/soramitsu/core_db/migrations/Migrations.kt https://github.com/soramitsu/fearless-iOS/blob/master/fearless/Common/Migration/UserStorage/SingleToMultiassetMigrationPolicy.swift
	Secret storage migration	Done	Done	https://github.com/soramitsu/fearless-Android/blob/master/core-db/src/main/java/jp/co/soramitsu/core_db/migrations/V2Migration.kt https://github.com/soramitsu/fearless-iOS/blob/master/fearless/Common/Migration/UserStorage/SingleToMultiassetMigrationPolicy.swift
1.2.	<i>Adapt Fearless Wallet networking for connecting to multiple networks at one time</i>			
	Chain registry approach implementation	Done	Done	https://github.com/soramitsu/fearless-Android/blob/master/runtime/src/main/java/jp/co/soramitsu/runtime/multiNetwork/ChainReg



				<code>istry.kt</code> https://github.com/soramitsu/fearless-iOS/blob/master/fearless/Common/Services/ChainRegistry/ChainRegistry.swift
	Support sync of available chain list with public GitHub repository	Done	Done	https://github.com/soramitsu/fearless-Android/blob/master/runtime/src/main/java/jp/co/soramitsu/runtime/multiNetwork/chain/ChainSyncService.kt https://github.com/soramitsu/fearless-iOS/blob/master/fearless/Common/Services/ChainRegistry/ChainSyncService.swift
	Support pool of connections to all networks	Done	Done	https://github.com/soramitsu/fearless-Android/blob/master/runtime/src/main/java/jp/co/soramitsu/runtime/multiNetwork/connection/ConnectionPool.kt https://github.com/soramitsu/fearless-iOS/blob/master/fearless/Common/Services/ChainRegistry/ConnectionPool/ConnectionPool.swift
	Support pool of SCALE encoder/decoder instances for each network based on dynamic runtime metadata and types	Done	Done	https://github.com/soramitsu/fearless-utils-Android/blob/develop/fearless-utils/src/main/java/jp/co/soramitsu/fearless_utils/runtime/definitions/v14/TypesParserV14.kt https://github.com/soramitsu/fearless-utils-iOS/blob/develop/FearlessUtils/TypesParserV14.swift



				lessUtils/Classes/Runtime/Metadata/Schema/RuntimeSchema.swift https://github.com/soramitsu/fearless-utils-iOS/blob/develop/FearlessUtils/Classes/Runtime/Metadata/Schema/TypeMetadata.swift
	Support runtime synchronizer: optimizes runtime metadata and types synchronization for each network to minimize memory consumption on a mobile device	Done	Done	https://github.com/soramitsu/fearless-Android/blob/master/runtime/src/main/java/jp/co/soramitsu/runtime/multiNetwork/runtime/RuntimeSyncService.kt https://github.com/soramitsu/fearless-iOS/blob/master/fearless/Common/Services/ChainRegistry/RuntimeProviderPool/RuntimeSyncService.swift
	Support subscription for runtime metadata version for each network	Done	Done	https://github.com/soramitsu/fearless-Android/blob/master/runtime/src/main/java/jp/co/soramitsu/runtime/multiNetwork/runtime/RuntimeProvider.kt https://github.com/soramitsu/fearless-iOS/blob/master/fearless/Common/Services/ChainRegistry/RuntimeProviderPool/RuntimeProvider.swift
1.3.	Adapt Fearless Wallet libraries for custom networks support			



	BIP 32 support	Done	Done	https://github.com/soramitsu/fearless-utils-Android/blob/develop/fearless-utils/src/main/java/jp/co/soramitsu/fearless_utils/encrypt/junction/BIP32JunctionDecoder.kt https://github.com/soramitsu/fearless-utils-iOS/blob/develop/FearlessUtils/Classes/Crypto/JunctionFactory/BIP32JunctionFactory.swift
	Support Nmap type	Done	Done	https://github.com/soramitsu/fearless-utils-Android/blob/develop/fearless-utils/src/main/java/jp/co/soramitsu/fearless_utils/runtime/metadata/RuntimeMetadataSchema.kt https://github.com/soramitsu/fearless-utils-iOS/blob/develop/FearlessUtils/Classes/Runtime/Metadata/StorageEntryType.swift
	Support different versions of Runtime metadata	Done	Done	https://github.com/soramitsu/fearless-utils-Android/blob/develop/fearless-utils/src/main/java/jp/co/soramitsu/fearless_utils/runtime/definitions/v14/TypesParserV14.kt https://github.com/soramitsu/fearless-utils-iOS/blob/develop/FearlessUtils/Classes/Runtime/Metadata/RuntimeMetadata.swift



2	UI adaptation & new features:			
2.1.	Wallet tab:			
	View all assets for the META-account	Done	Done	https://github.com/soramitsu/fearless-Android/blob/master/feature-account-impl/src/main/java/jp/co/soramitsu/feature_account_impl/presentation/account/details/AccountDetailsFragment.kt https://github.com/soramitsu/fearless-iOS/tree/master/fearless/Modules/NewWallet/ChainAccountBalanceList
	Support dynamic asset list	Done	Done	https://github.com/soramitsu/fearless-Android/blob/master/feature-wallet-impl/src/main/java/jp/co/soramitsu/feature_wallet_impl/presentation/balance/list/BalanceListFragment.kt https://github.com/soramitsu/fearless-iOS/tree/develop/fearless/Modules/ManageAssets
	Manage visible assets on the Wallet screen	Done	Done	https://github.com/soramitsu/fearless-Android/blob/master/feature-wallet-impl/src/main/java/jp/co/soramitsu/feature_wallet_impl/presentation/balance/manageAssets/ManageAssetsFragment.kt https://github.com/soramitsu/fearless-iOS/tree/develop/fearless/Modules/ManageAssets
	Move asset actions to the inside of widget asset	Done	Done	https://github.com/soramitsu/fearless-iOS/tree/develop/fearless/Modules/ManageAssets



	(Send/Receive/Buy/History)			rless-Android/blob/master/feature-wallet-impl/src/main/java/jp/co/soramitsu/feature_wallet_impl/presentation/balance/assetActions/AssetActionsView.kt https://github.com/soramitsu/fearless-iOS/tree/master/fearless/Modules/NewWallet/ChainAccount
	Migrate from Subscan API to Coingecko API for getting token price	Done	Done	https://github.com/soramitsu/fearless-Android/blob/master/common/src/main/java/jp/co/soramitsu/common/data/network/coingecko/CoingeckoApi.kt https://github.com/soramitsu/fearless-iOS/blob/master/fearless/Common/DataProvider/Sources/CoingeckoPriceSource.swift
2.2.	<i>Crowdloan & Staking tab:</i>			
	Add selector of the token (DOT/KSM)	Done	Done	https://github.com/soramitsu/fearless-Android/blob/master/feature-wallet-api/src/main/java/jp/co/soramitsu/feature_wallet_api/presentation/mixin/assetSelector/AssetSelectorProvider.kt https://github.com/soramitsu/fearless-iOS/tree/master/fearless/Modules/ChainSelection
	Shared state containing chain and asset to pass to other screens from root (Crowdloan or Staking) screen	Done	Done	https://github.com/soramitsu/fearless-Android/blob/master/runtime/src/main/java/jp/co/soramitsu/runtime/state/SingleAssetShare



				dState.kt https://github.com/soramitsu/fearless-iOS/blob/master/fearless/Modules/Crowdloan/Model/CrowdloanSharedState.swift
2.3.	Settings tab:			
2.3.1	Rework Networks screen:			
	Now display supported networks with an option to configure the connection to the network	Done	Done	https://github.com/soramitsu/fearless-Android/blob/master/feature-account-impl/src/main/java/jp/co/soramitsu/feature_account_impl/presentation/node/list/NodeSFragment.kt https://github.com/soramitsu/fearless-iOS/tree/master/fearless/Modules/NodeSelection
	Change limitation of custom nodes from to be only Polkadot/Kusama/Westend to match network	Done	Done	https://github.com/soramitsu/fearless-Android/blob/master/feature-account-impl/src/main/java/jp/co/soramitsu/feature_account_impl/presentation/node/add/AddNodeViewModel.kt https://github.com/soramitsu/fearless-iOS/tree/master/fearless/Modules/AddCustomNode
	Users would be able to choose “auto-balance” between know nodes, or manually select node to which to connect to	Done	Done	https://github.com/soramitsu/fearless-Android/blob/master/feature-account-impl/src/main/java/jp/co/soramitsu/feature_account_impl/presentation/node/list/Node



				sFragment.kt https://github.com/soramitsu/fearless-iOS/tree/master/fearless/Modules/NodeSelection
2.3.2.	Rework Accounts screen:			
	Now display a list of META-accounts (instead of network accounts)	Done	Done	https://github.com/soramitsu/fearless-Android/blob/master/feature-account-impl/src/main/java/jp/co/soramitsu/feature_account_impl/presentation/account/list/AccountListFragment.kt https://github.com/soramitsu/fearless-iOS/tree/master/fearless/Modules/AccountManagement
	View META-account and associated network accounts	Done	Done	https://github.com/soramitsu/fearless-Android/blob/master/feature-account-impl/src/main/java/jp/co/soramitsu/feature_account_impl/presentation/account/details/AccountDetailsFragment.kt https://github.com/soramitsu/fearless-iOS/tree/master/fearless/Modules/WalletDetails
	Following options are available to each network account:			
	Change account	Done	Done	https://github.com/soramitsu/fearless-Android/blob/678424a33c0efa535f3d1f76ee3c74429b44a253/feature-account-impl/src/main/java/jp/co/soramitsu/feature_account_impl/presentation/account/d



				etails/WalletAccountActionsSheet.kt#L37 https://github.com/soramitsu/fearless-iOS/blob/develop/fearless/Modules/NewWallet/ChainAccount/ChainAccountPresenter.swift#L255
	Export account	Done	Done	https://github.com/soramitsu/fearless-Android/blob/678424a33c0efa535f3d1f76ee3c74429b44a253/feature-account-impl/src/main/java/jp/co/soramitsu/feature_account_impl/presentation/account/details/WalletAccountActionsSheet.kt#L33 https://github.com/soramitsu/fearless-iOS/tree/master/fearless/Modules/Export
	Copy address	Done	Done	https://github.com/soramitsu/fearless-Android/blob/678424a33c0efa535f3d1f76ee3c74429b44a253/feature-account-api/src/main/java/jp/co/soramitsu/feature_account_api/presentation/actions/ExternalActionsSheet.kt#L33 https://github.com/soramitsu/fearless-iOS/blob/develop/fearless/Modules/NewWallet/ChainAccount/ChainAccountPresenter.swift#L249
	View in Polkascan (if available)	Done	Done	https://github.com/soramitsu/fearless-Android/blob/678424a33c0



				efa535f3d1f76ee3c74429b44a253/feature-account-api/src/main/java/jp/co/soramitsu/feature_account_api/presentation/actions/ExternalActionsSheet.kt#L40 https://github.com/soramitsu/fearless-iOS/blob/develop/fearless/Common/Model/ChainAction.swift#L6
	View in Subscan (if available)	Done	Done	https://github.com/soramitsu/fearless-Android/blob/678424a33c0efa535f3d1f76ee3c74429b44a253/feature-account-api/src/main/java/jp/co/soramitsu/feature_account_api/presentation/actions/ExternalActionsSheet.kt#L40 https://github.com/soramitsu/fearless-iOS/blob/develop/fearless/Common/Model/ChainAction.swift#L7
	Migration educational stories after the update	Done	Done	https://github.com/soramitsu/fearless-Android/blob/master/common/src/main/java/jp/co/soramitsu/common/data/OnboardingStoriesDataSource.kt https://github.com/soramitsu/fearless-iOS/blob/develop/fearless/Modules/EducationStoriesAssembly.swift
2.3.3	Create/Import/Export account flow			
	Add option of importing/exporting META-account	Done	Done	https://github.com/soramitsu/fearless-iOS/blob/develop/fearless/Modules/EducationStoriesAssembly.swift



				rless-Android/blob/678424a33c0efa535f3d1f76ee3c74429b44a253/feature-account-impl/src/main/java/jp/co/soramitsu/feature_account_impl/presentation/account/list/WalletOptionsBottomSheet.kt#L26 https://github.com/soramitsu/fearless-iOS/tree/master/fearless/Modules/Export https://github.com/soramitsu/fearless-iOS/tree/master/fearless/Modules/AccountImport
	Add option of two derivation paths in Advanced	Done	Done	https://github.com/soramitsu/fearless-Android/blob/master/feature-account-impl/src/main/java/jp/co/soramitsu/feature_account_impl/presentation/view/advanced/AdvancedBlockView.kt https://github.com/soramitsu/fearless-iOS/blob/develop/fearless/Modules/AccountCreate/Model/AccountCreationRequest.swift#L8

Public Demos, deliverables:

Demo #1, August 27th, 2021

Presentation

iOS/Android deliverables:

- Upgrade networking in the app to support multiple networks & their runtimes
- Upgrade data storage & secure account storage to support new account model

Github links:

iOS link: <https://github.com/soramitsu/fearless-iOS/pull/364/files>

Android link: <https://github.com/soramitsu/fearless-Android/pull/352>

Demo #2, September 22nd, 2021

Presentation

iOS/Android deliverables:

- Mobile apps now can connect to multiple networks & construct their Runtimes
- Mappers for adapting domain logic in the app to work with new networking logic are finished
- Allow us to reuse existing code with new networking & Runtime logic
- Staking & Crowdlans are migrated to new logic
- The team maintaining open source repo with all networks which app will use:
- <https://github.com/soramitsu/fearless-utils/tree/master/chains>
- The team now can work on UI features, such as developing Wallet, Accounts, Settings & Networks new functionality
- Testing of users' migration for new Account & Secret storage has started
- Testing on Wallet features expected to start next week
- Mockups for new & refined functionality (such as updated Create/Import/Export features) are almost completed & reviewed

Github links:

iOS link: <https://github.com/soramitsu/fearless-iOS/pull/404>

Android link:

<https://github.com/soramitsu/fearless-Android/commit/05a3a39b42f65829d243b41ee618fb8a4cc681e2>

Demo #3, November 3rd, 2021

Presentation

iOS/Android deliverables:

Android v1.9.6 and iOS v1.9.9 release: Runtime V14 Upgrade Hotfix

iOS v1.9.10 and v1.9.11 releases, bugs Fixed:

- Nodes sending messages in an unexpected way were causing the
- Crowdloan and Staking screens being unresponsive

Github links:

iOS link: <https://github.com/soramitsu/fearless-iOS/pull/444/>

Android link: <https://github.com/soramitsu/fearless-Android/pull/408>

Demo #4, December 23d, 2021

Presentation

Android deliverables:

- Create, import accounts
- Main screen (Wallet) with token list
- Asset detailed balances, transfers
- Crowdloans tab and functions
- Staking
- Migration from chain-accounts to wallets
- Interlay custom crowdloan implementation

iOS deliverables:

- Runtime Metadata v14 upgrade is in progress
- The same feature as for Android is waiting to be tested and debugged

Github links:

iOS link: <https://github.com/soramitsu/fearless-utils-iOS/pull/59>

Android link: <https://github.com/soramitsu/fearless-Android/pull/415>

Demo #5, February 2nd, 2022

Presentation

Android deliverables:

- Convenient asset sorting in the Wallet tab
- Moonbeam, Moonriver, Statemine, Statemint parachains support
- Chain accounts export
- Networks management and node switching
- Optimisations and improvements

iOS deliverables:

- Multi-assets functionality with supporting the most popular parachains
- Some architectural changes
- Hotfix releases v 2.0.1 and v 2.0.2

Github links:

iOS link: <https://github.com/soramitsu/fearless-iOS/pull/492/>

Android link: <https://github.com/soramitsu/fearless-Android/pull/442>

Demo #6, February 22nd, 2022

Presentation

Android deliverables:

- Wallet Export and Import Update
- Kintsugi balances and transfer support
- Add accounts with unique mnemonic/ key pair
- Networks management and node switching (auto-balance nodes)
- Some UI refinements

iOS deliverables:

- V 2.0.3 released on 15th of February, minor improvements
- Convenient asset sorting in the Wallet tab

- Moonbeam, Moonriver parachains support with balances and transfers
- Chain accounts export
- Network management and node switching
- Urgent fixes and improvements

Github links:

iOS link: <https://github.com/soramitsu/fearless-iOS/pull/495/files>

Android links:

<https://github.com/soramitsu/fearless-Android/pull/488>

<https://github.com/soramitsu/fearless-Android/pull/493>

Demo #7, March 17th, 2022

Presentation

Android deliverables:

- v 2.0.3 - several optimisations and improvements

iOS deliverables:

- Kintsugi balance and transfer support

Github links:

iOS link: <https://github.com/soramitsu/fearless-iOS/pull/535>

Android link: <https://github.com/soramitsu/fearless-Android/pull/495>

Demo #8, April 12v, 2022

Presentation

iOS deliverables:

- Asset management feature
- Wallet export feature
- Add a chain-account with unique key-pair
- Onboarding stories for new users
- Final fixes and refinements



Android deliverables:

- Onboarding stories for new users
- Final fixes and refinements

Github links:

iOS link: <https://github.com/soramitsu/fearless-iOS/pull/636>

Android link: <https://github.com/soramitsu/fearless-Android/pull/567>

Additional information about Fearless Wallet

- Fearless Wallet open source **GitHub repositories**:

[Android github repository](#)

[iOS github repository](#)

[Android Utils github repository](#)

[iOS Utils github repository](#)

- Fearless Wallet [Wiki](#)
- Fearless Wallet [Medium](#)

Fearless Wallet's release in the Apple AppStore and Google Play store in November 2020 had a **press release** published from the SORAMITSU site: <https://soramitsu.co.jp/fearless-wallet-release>