

Initial State

- There are three picos in two engines
 There are two directories (just picos) with arbitrary location
 Directories record engine location (Internet end point)
 Sovrin ledger links pico name (as DID) to DDO giving (among other things) the directory where the pico's information is located.

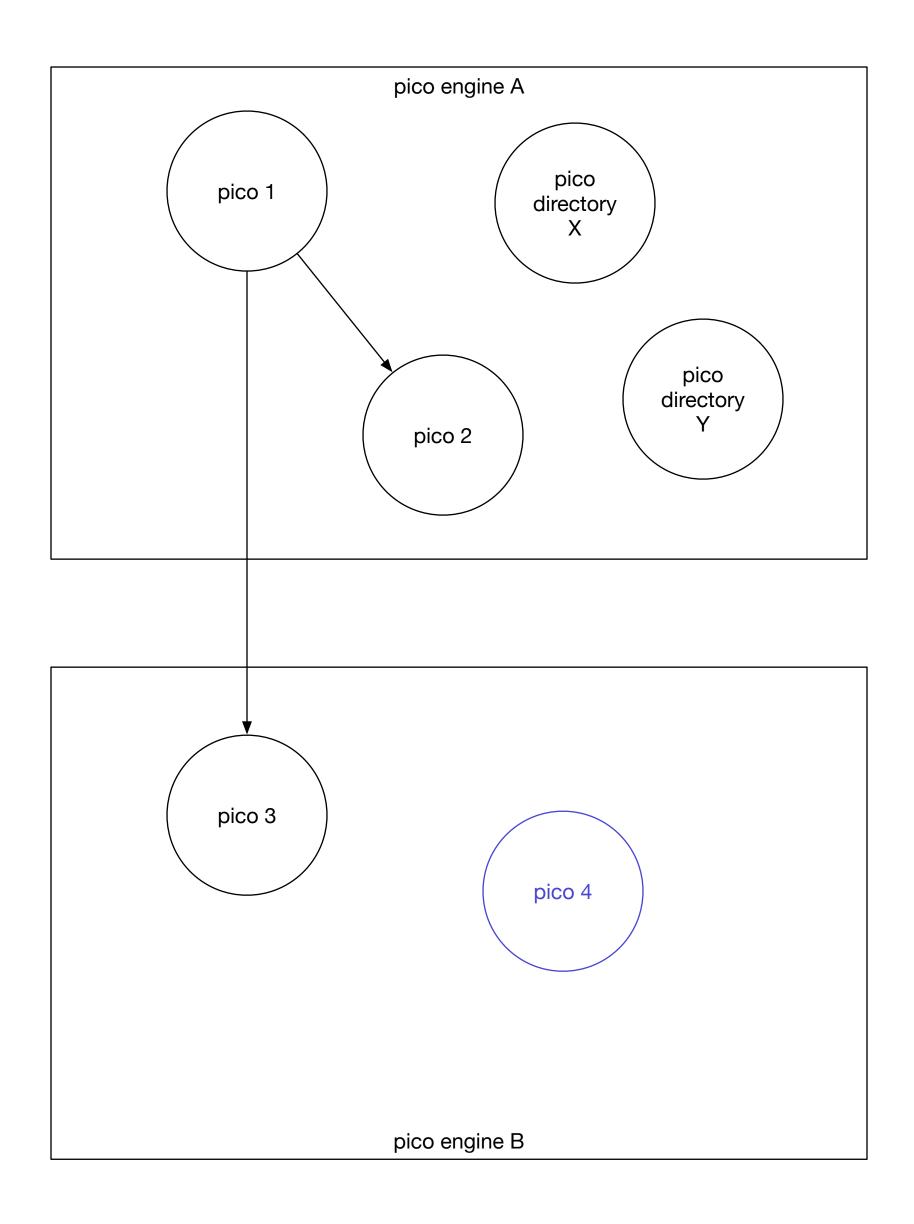
X Directory

```
did:sov:1 → {...`eng`:`A`...}
did:sov:3 → {...`eng`:`B`... }
```

Y Directory

```
did:sov:2 → {...`eng`:`A`... }
```

```
did:sov:1 → {...`dir`:`X`...}
did:sov:2 → {...`dir`:`Y`... }
did:sov:3 → {...`dir`:`X`... }
```



Pico 4 is created

- Creation adds engine information to a directory (could be arbitrary)
 New entry is published to ledger linking DID to DDO containing directory pointer.

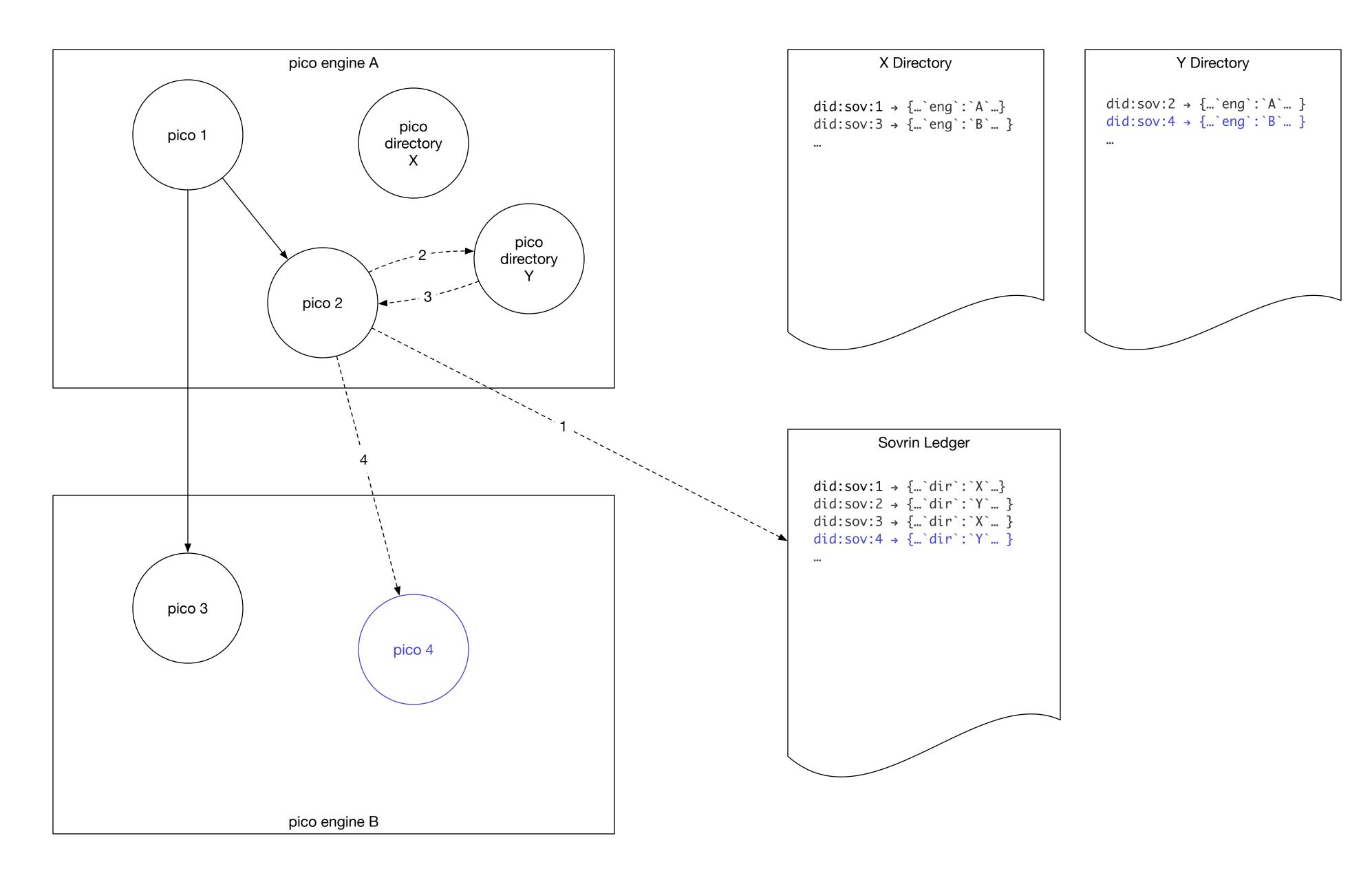
X Directory

```
did:sov:1 → {...`eng`:`A`...}
did:sov:3 → {...`eng`:`B`...}
```

Y Directory

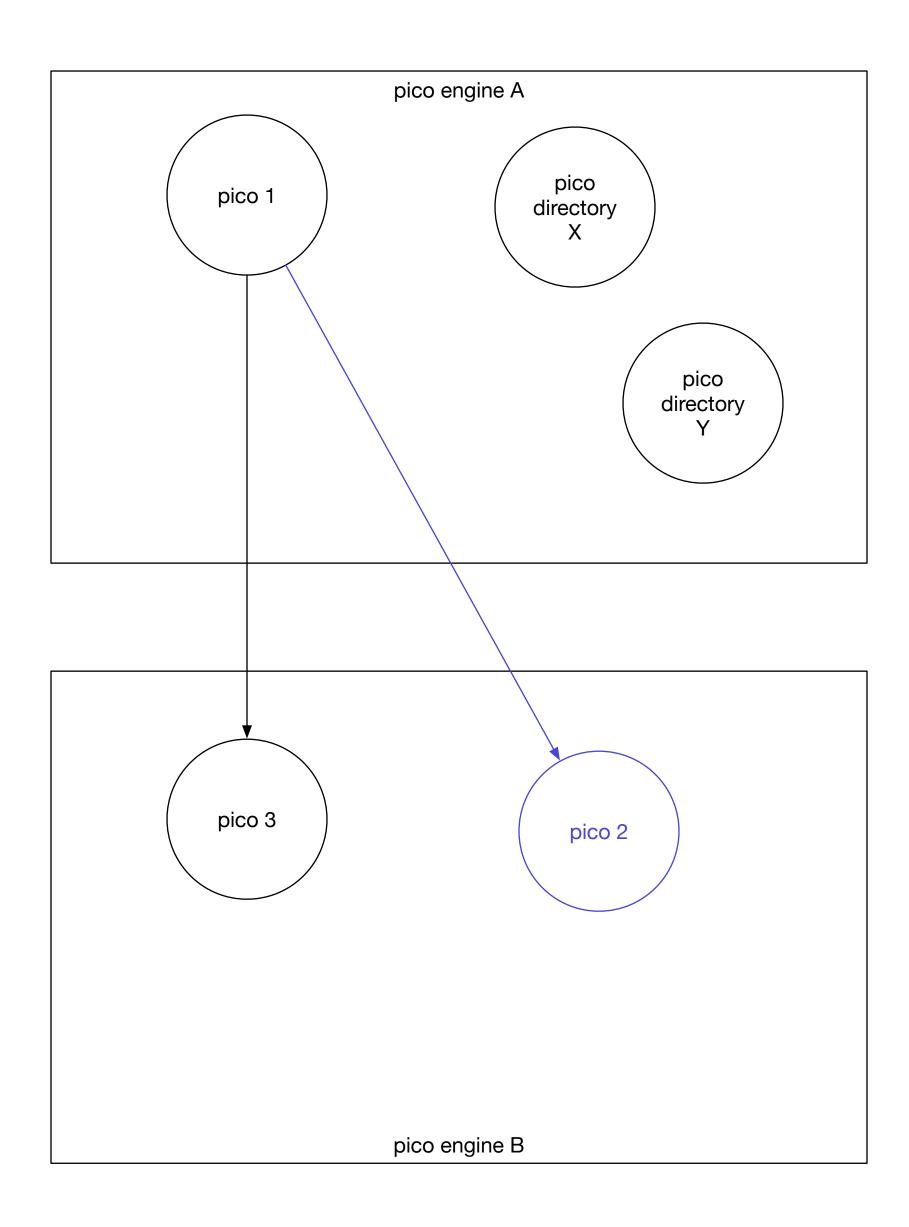
```
did:sov:2 → {...`eng`:`A`... }
did:sov:4 → {...`eng`:`B`... }
```

```
did:sov:1 → {...`dir`:`X`...}
did:sov:2 → {...`dir`:`Y`... }
did:sov:3 → {...`dir`:`X`... }
did:sov:4 → {...`dir`:`Y`... }
```



Pico 2 wants to talk to Pico 4 (discovery)

- Ask ledger for DDO using DID
 Use DDO to find directory
 Look up engine in directory for DID
 Use engine to construct event address



Pico 2 moves

- Pico is transferred to engine B
 Directory is updated, but not the ledger.

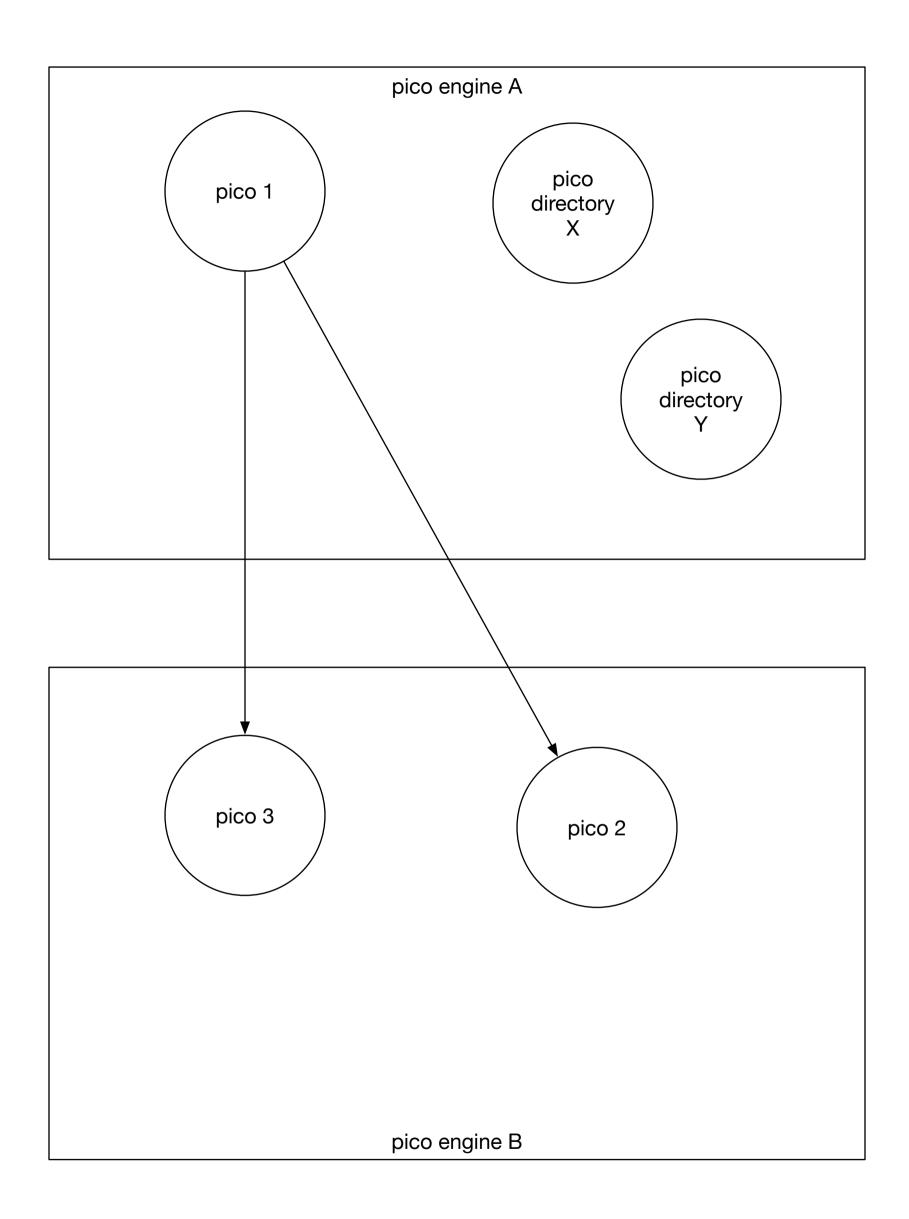
X Directory

```
did:sov:1 → {...`eng`:`A`...}
did:sov:3 → {...`eng`:`B`...}
```

Y Directory

```
did:sov:2 → {...`eng`:`B`... }
```

```
did:sov:1 → {...`dir`:`X`...}
did:sov:2 → {...`dir`:`Y`... }
did:sov:3 → {...`dir`:`X`... }
```



- Pico 3 gets new directory
 1. Directory entry is moved from X to Y
 2. Ledger is updated with new entry pointing to new DDO naming directory Y

X Directory

```
did:sov:1 → {...`eng`:`A`...}
```

Y Directory

```
did:sov:2 → {...`eng`:`B`... }
did:sov:3 → {...`eng`:`B`... }
```

```
did:sov:1 → {...`dir`:`X`...}
did:sov:2 → {...`dir`:`Y`... }
did:sov:3 → {...`dir`:`X`...}
did:sov:3 → {...`dir`:`Y`... }
```