Back to the safety zone

within a complex environment

Our portfolio

```
@Test
public void printPortfolioLineGivenOneBuyAndOneSellOperationOnSameCompany() {
    String expectedPortfolio = "company | shares | current price | current value | last operation\n" +
                "Old School Waterfall Software LTD | 500 | $5.75 | $2,875.00 | sold 500 on 11/12/2018";
    when(calendar.now())
                .thenReturn(LocalDate.of( year: 1990, month: 2, dayOfMonth: 14))
                .thenReturn(LocalDate.of( year: 2018, month: 12, dayOfMonth: 11));
    when(priceProxy.getPriceFor(TestPortfolioScenarios.OLD_SCHOOL_WATERFALL_SOFTWARE_LTD)).thenReturn( t: 5.75);
    portfolioService.buy( amount: 1000, TestPortfolioScenarios.OLD_SCHOOL_WATERFALL_SOFTWARE_LTD);
    portfolioService.sell( amount: 500, TestPortfolioScenarios.OLD_SCHOOL_WATERFALL_SOFTWARE_LTD);

    portfolioService.printPortfolioHistory();

    verify(printer).print(expectedPortfolio);
}
```

```
3   3  import domain.Transaction;
4   4  import domain.TransactionType;
       @@ -23,7 +23,7 @@ public class PortfolioService {
23  23      }
24  24
25  25      public void sell(int amount, String shareName) {
26
        26          portfolioRepo.append(new Transaction(amount, shareName, calendar.now(), TransactionType.SELL));
27  27      }
28  28
29  29      public void printPortfolioHistory() {
```

Our portfolio

```
3  3  public enum TransactionType {
4          BUY
   4          SELL, BUY
5  5  }
```
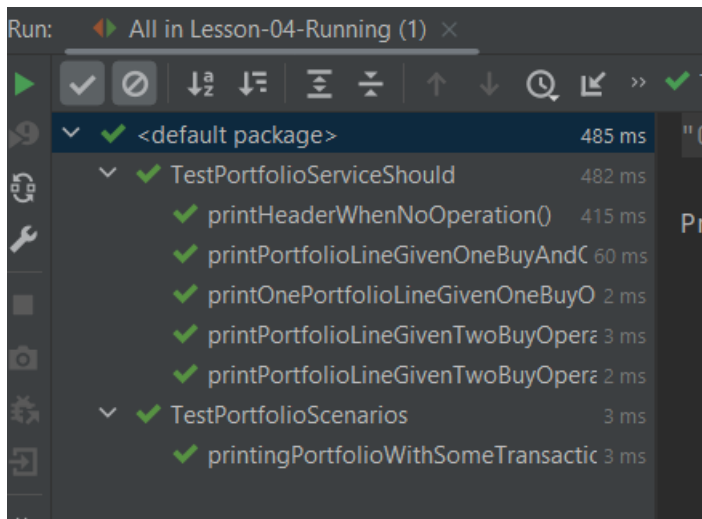
```
@@ -15,13 +15,9 @@ public class PortfolioLine {
15 15
16 16
17 17      public PortfolioLine(List<Transaction> transactionByCompany, double currentPrice) {
18            //    Old School Waterfall Software LTD | 500 | $5.75 | $2,875.00 | sold 500 on 11/12/2018
19 18         this.currentPrice = currentPrice;
20            for (Transaction transaction :
21                    transactionByCompany) {
22                if (transaction.getTransactionType() == TransactionType.BUY) {
23                    this.shareAmount += transaction.getAmount();
24                }
   19         for (Transaction transaction : transactionByCompany) {
   20             calculatePortfolioLineAmount(transaction);
25 21
26 22             if (this.lastTransaction == null || transaction.getDate().isAfter(this.lastTransaction.getDate())) {
27 23                 this.lastTransaction = transaction;
@@ -31,6 +27,14 @@ public class PortfolioLine {
31 27             this.company = lastTransaction.getShareName();
32 28      }
33 29
   30      private void calculatePortfolioLineAmount(Transaction transaction) {
   31          if (transaction.getTransactionType() == TransactionType.BUY) {
   32              this.shareAmount += transaction.getAmount();
   33              return;
   34          }
   35          this.shareAmount = this.shareAmount - transaction.getAmount();
   36      }
   37
34 38
```

3

Our portfolio
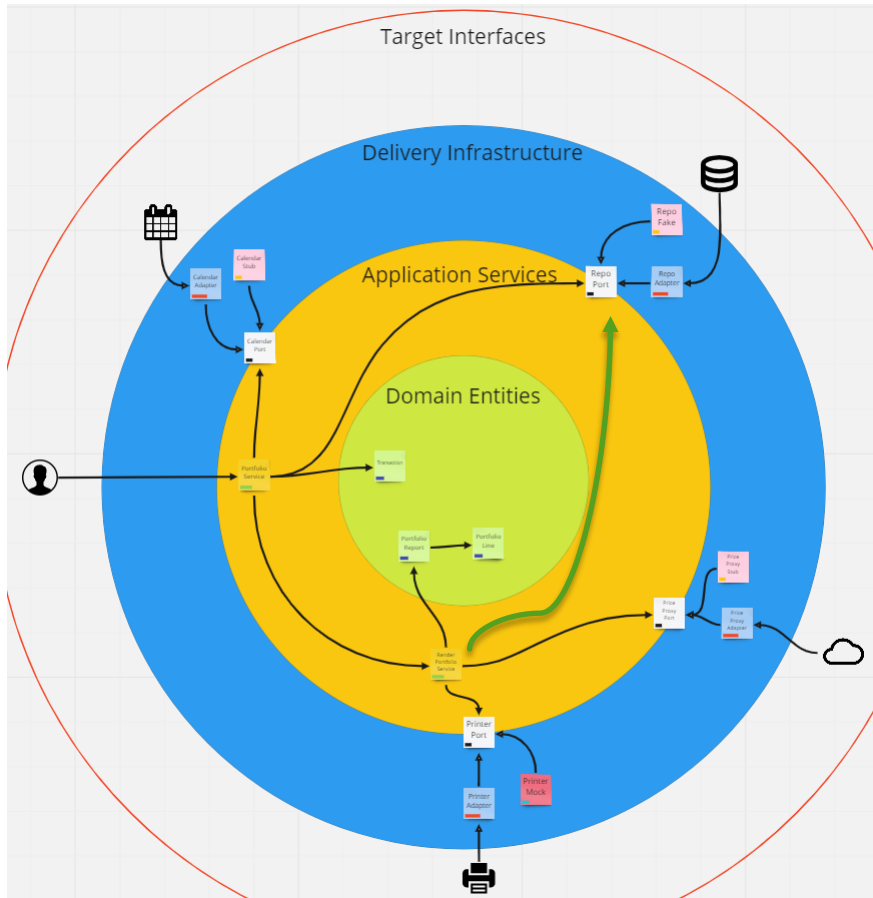
```
@@ -20,7 +20,7 @@ public class Transaction {
20 20
21 21     @Override
22 22     public String toString() {
23         return "bought " +
   23         return (TransactionType.BUY.equals(this.transactionType)?"bought ":"sold ") +
24 24             amount +
25 25             " on " +
26 26             date.format(DateTimeFormatter.ofPattern("dd/MM/yyyy"));
```

```
@@ -21,11 +21,11 @@ public class PortfolioReport {
21 21         for (Transaction transaction : transactions) {
22 22             if (transactionsByCompanies.containsKey(transaction.getShareName())) {
23 23                 transactionsByCompanies.get(transaction.getShareName()).add(transaction);
24             } else {
25                 List<Transaction> newTransaction = new ArrayList<>();
26                 newTransaction.add(transaction);
27                 transactionsByCompanies.put(transaction.getShareName(), newTransaction);
   24                 continue;
28 25             }
   26             List<Transaction> newTransaction = new ArrayList<>();
   27             newTransaction.add(transaction);
   28             transactionsByCompanies.put(transaction.getShareName(), newTransaction);
29 29         }
30 30         for (List<Transaction> groupedTransactions : transactionsByCompanies.values()) {
31 31             lines.add(new PortfolioLine(groupedTransactions, priceProxy.getPriceFor(groupedTransactions.get(0).getShareName())));
```
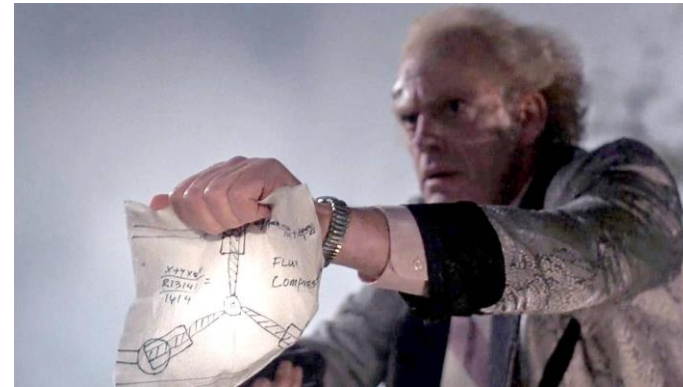
Acceptance Test Passed!!!

Run: ◀▶ All in Lesson-04-Running (1) ✕
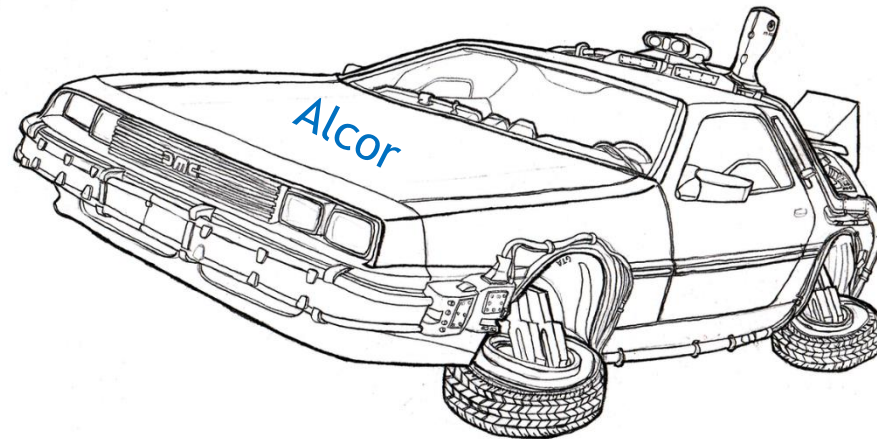
▶ ✓ ⊘ ⬇ᵃᵤ ⬇ᵤᵤ ⊼ ⊻ ⬆ ⬇ ⊕ ⬋ » ✓ T

```
∨ ✓ <default package>                    485 ms    "C
  ∨ ✓ TestPortfolioServiceShould          482 ms
      ✓ printHeaderWhenNoOperation()      415 ms    Pr
      ✓ printPortfolioLineGivenOneBuyAndC  60 ms
      ✓ printOnePortfolioLineGivenOneBuyO   2 ms
      ✓ printPortfolioLineGivenTwoBuyOpera  3 ms
      ✓ printPortfolioLineGivenTwoBuyOpera  2 ms
  ∨ ✓ TestPortfolioScenarios               3 ms
      ✓ printingPortfolioWithSomeTransactio 3 ms
```

Onion architecture

RenderPortfolioService -> Repo port

Where we started

We need a strategy!

Alcor

Open your eyes

Key learnings

User

Value

Knowledge

Behaviour / test

Explicit intention

Minimize Entropy

Communication
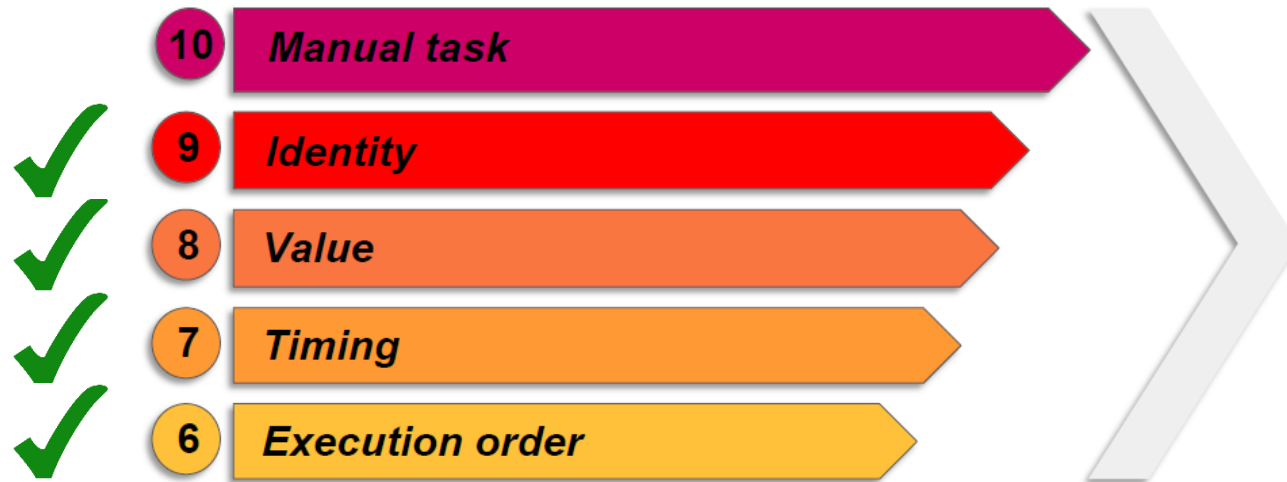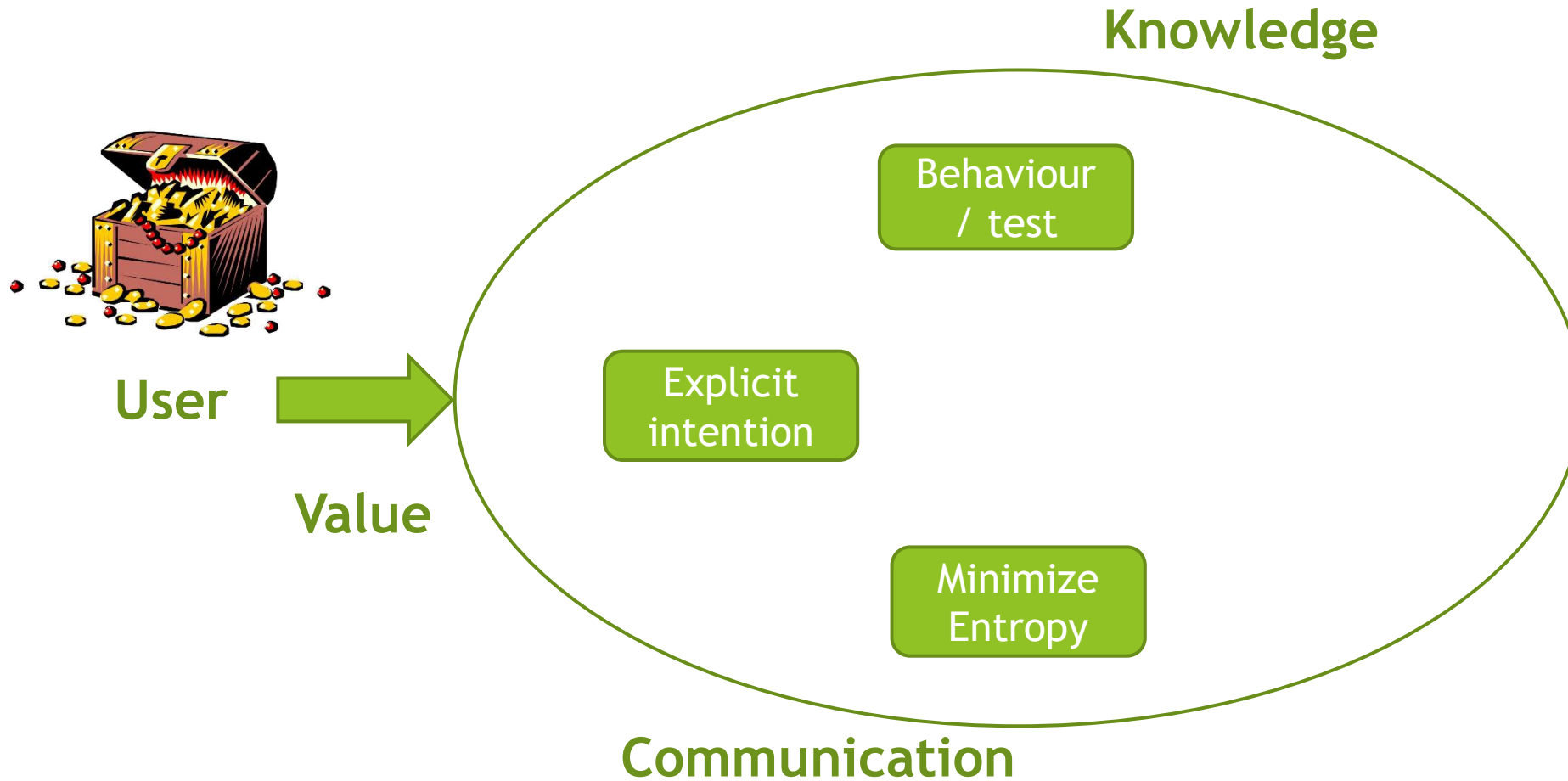
Use the specific kind of Test

Target Interfaces

Infracstructure

Application Services

Domain Entities
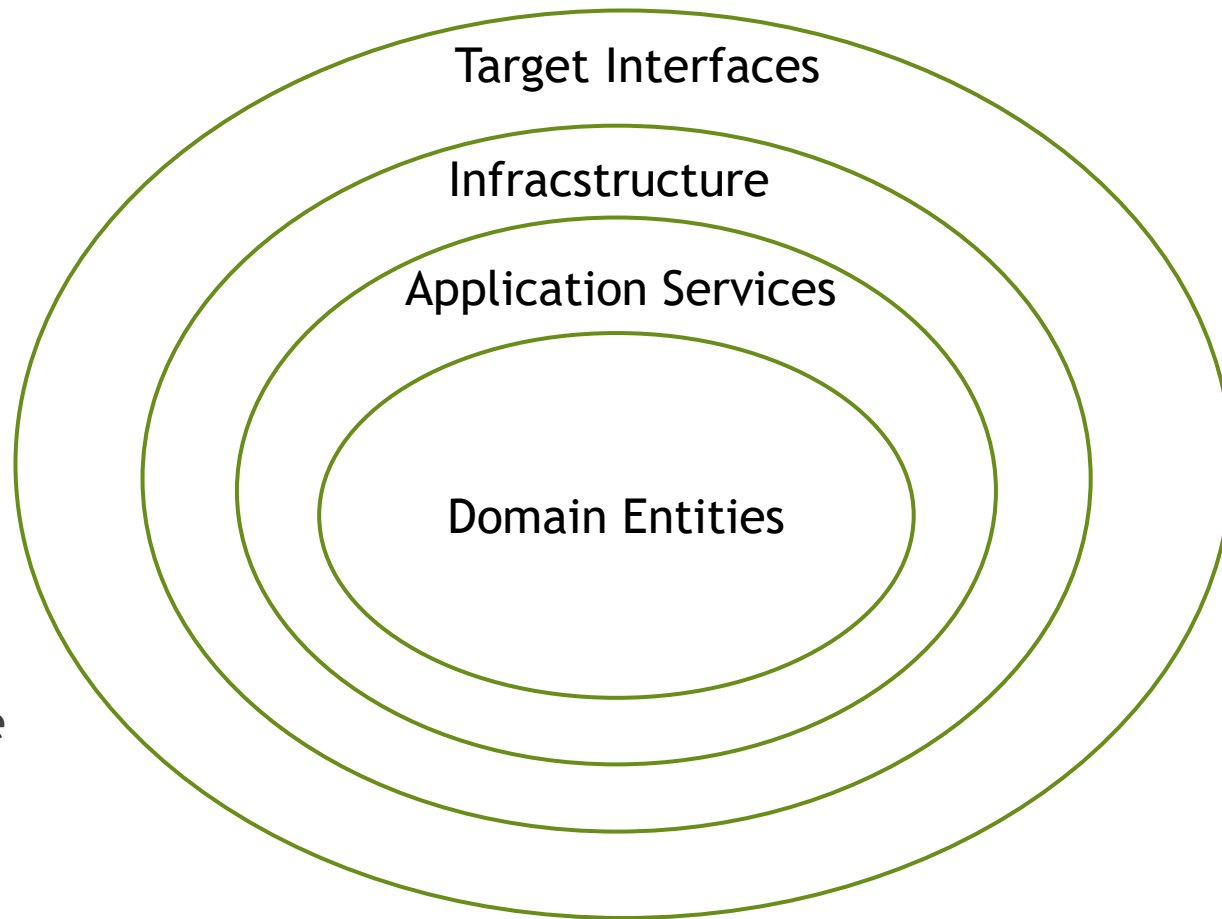
▶ Unit

▶ Acceptance

▶ End to end

▶ Integration

Test doubles

Dummy

Stub

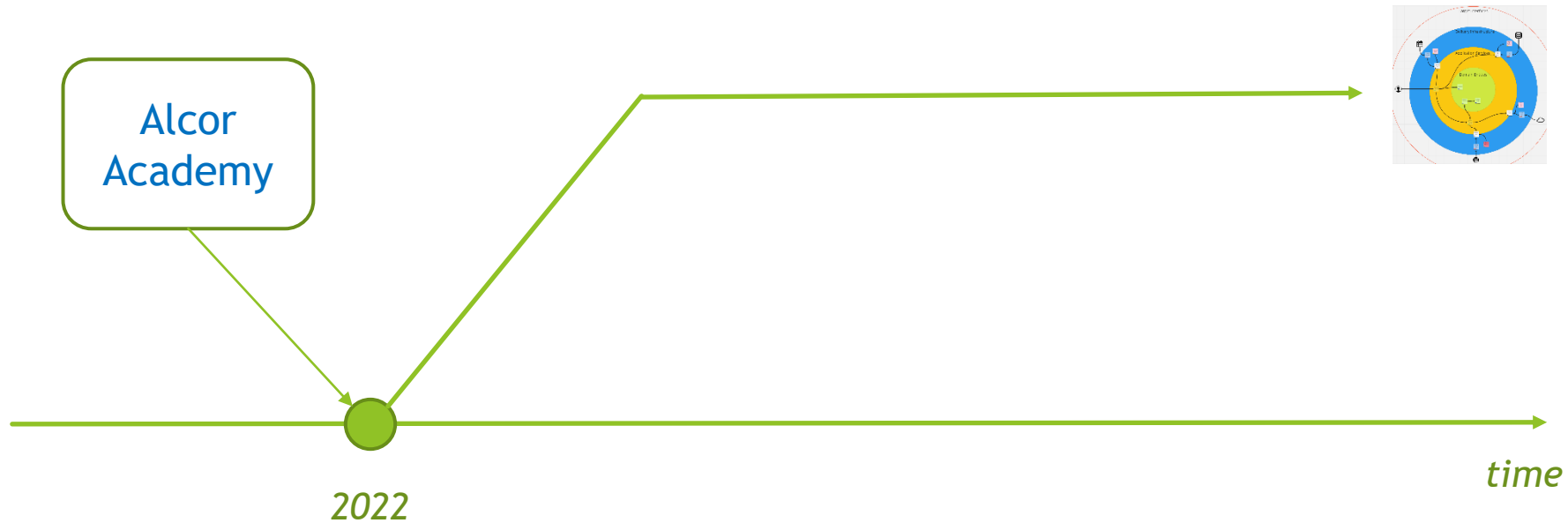**Mock**

Fake

Spy

Our Alternative 2052

Alcor
Academy

2022

time

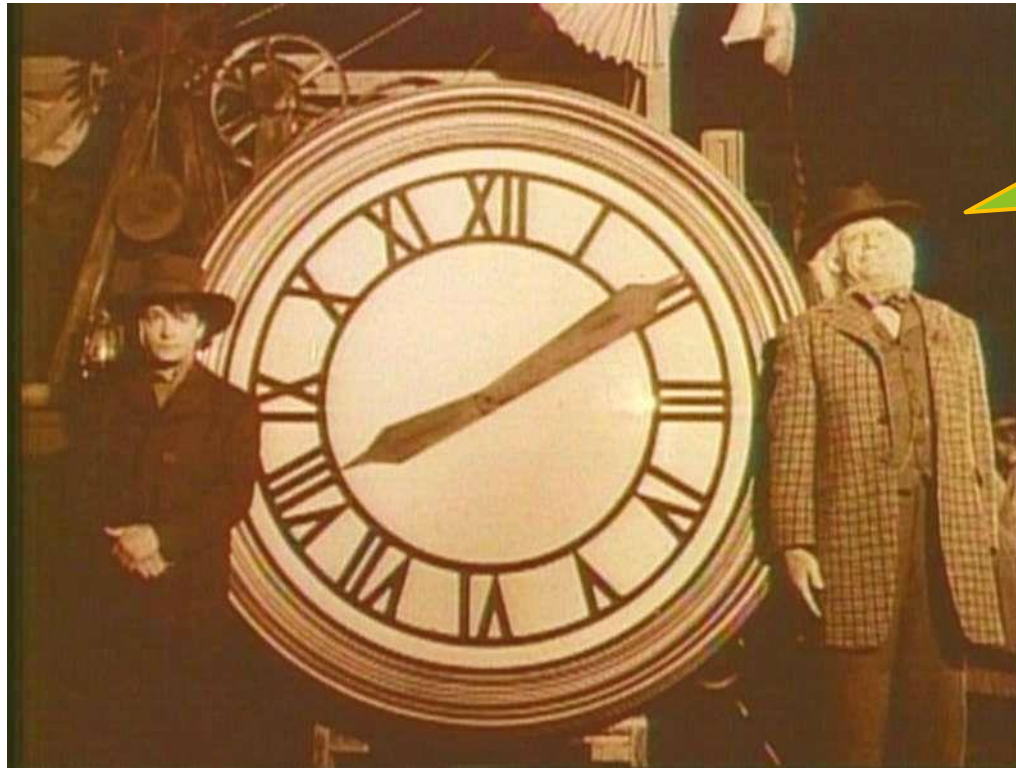*Doc Emmett Brown: 'Roads? Where We're Going, We Don't Need Roads'*

Thank you!

▶ Questions?

@ stefano.concaro@eoc.ch

And special thanks

May 24th 2022