EARNED SCHEDULE

EMPIRICAL PREDICTIONS

For costs and time

at the end of the project

during project execution

The project – a drone swarm

- Build 150 drones
- for a New Years swarm

The challenge: forecast time and cost

Question:

- How to forecast
  - total time needed
  - total expenditure expected

- **during executing**

Stop steering from looking back. Look forward

Earned Schedule : the past does feed into the future

Empirical predictions

- We assume we can make reasonable predictions of expected time and costs
- Planning is based on delivery of finished products
- We assume teams reach stable operations
  - AKA stable productivity

Forecast the future

- Based on realized production we extrapolate
  - Expected total duration
  - Expected total cost

The example

An easy project:

- Assemble 2 drones per day
- 10 drones per week
- 150 drones in 15 weeks

- Cost per unit: € 10,-
- Total budgeted costs: € 1.500,-

Planning is straightforward: lineair

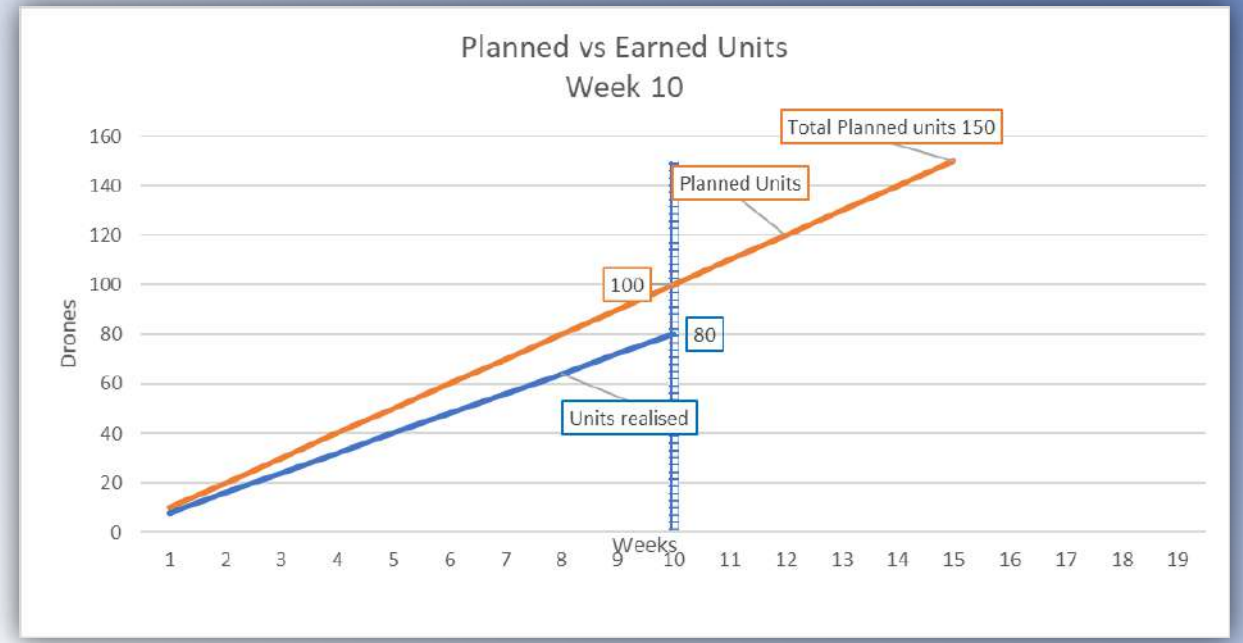
So we build and work and assemble

We now are in week 10

How did we deliver?

- We should have built 100 drones
- However: we only finished 80 . . . . .

Planned units vs units build



20 drones short

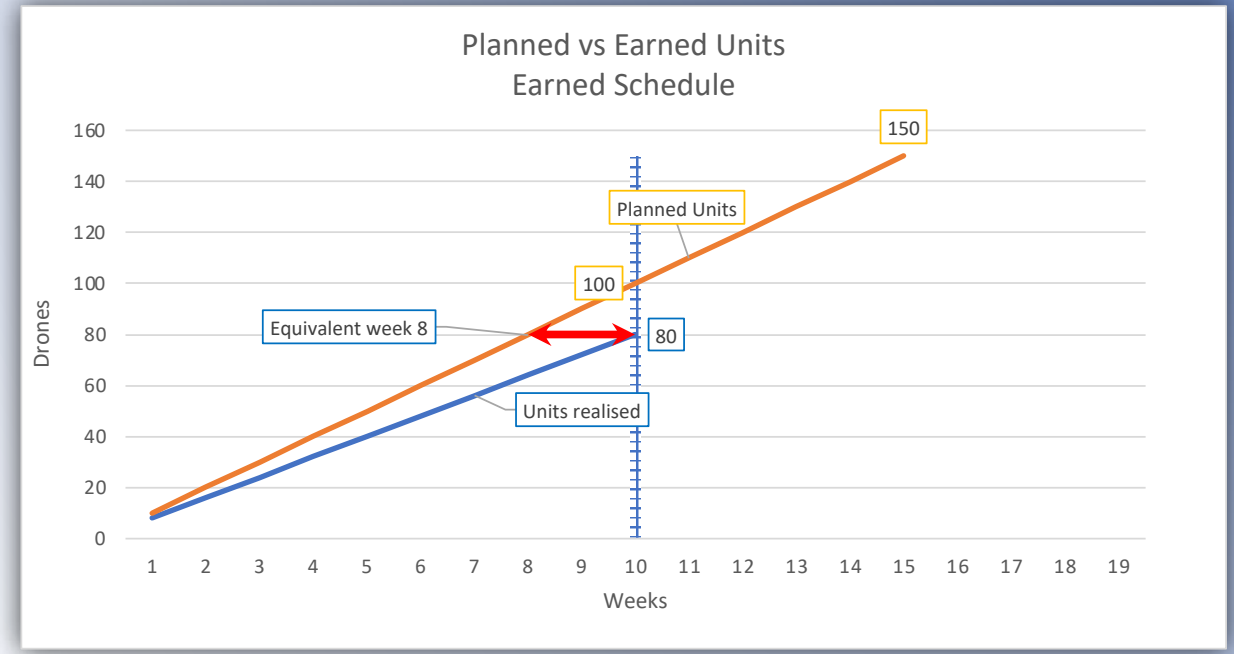
We did not deliver as much as planned

We have delay !

Earned schedule

- 80 drones were PLANNED to be delivered much earlier
- In week 8 that number should have been reached
- Not week 10

Equivalent production of 8 weeks in stead of 10



What does this predict?

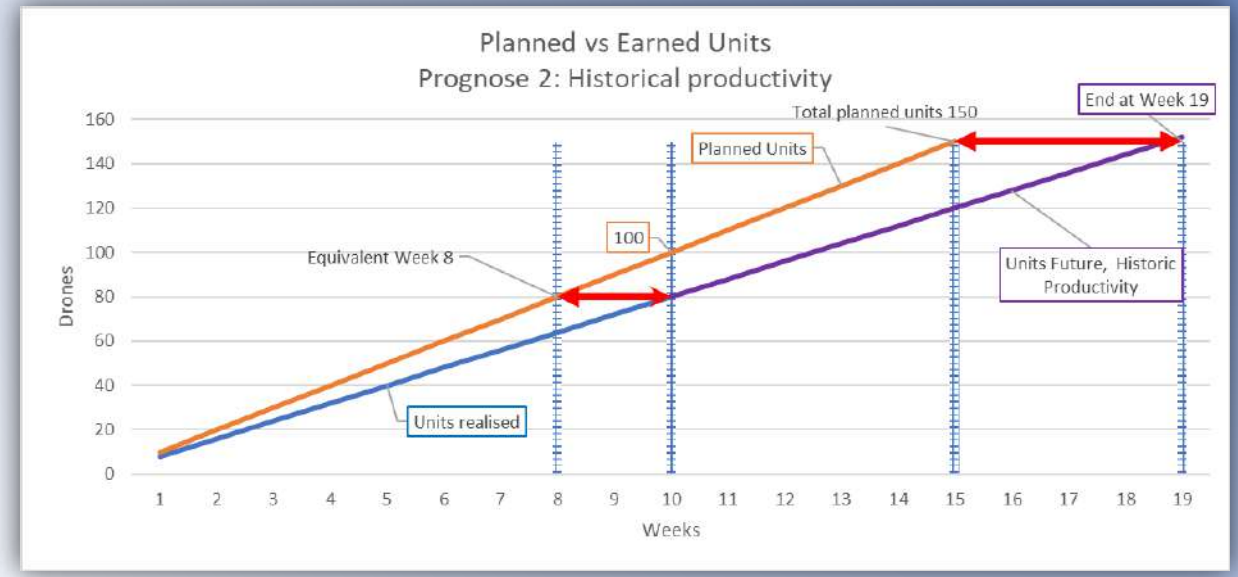
If we continu like this

Assuming every thing continues as it did so far

- We will continue to be late
  - And late
    - And late
- Until we have delivered 150 drones
- In week 19

Prediction:

week 19 to deliver 150 drones



Increased productivity needed

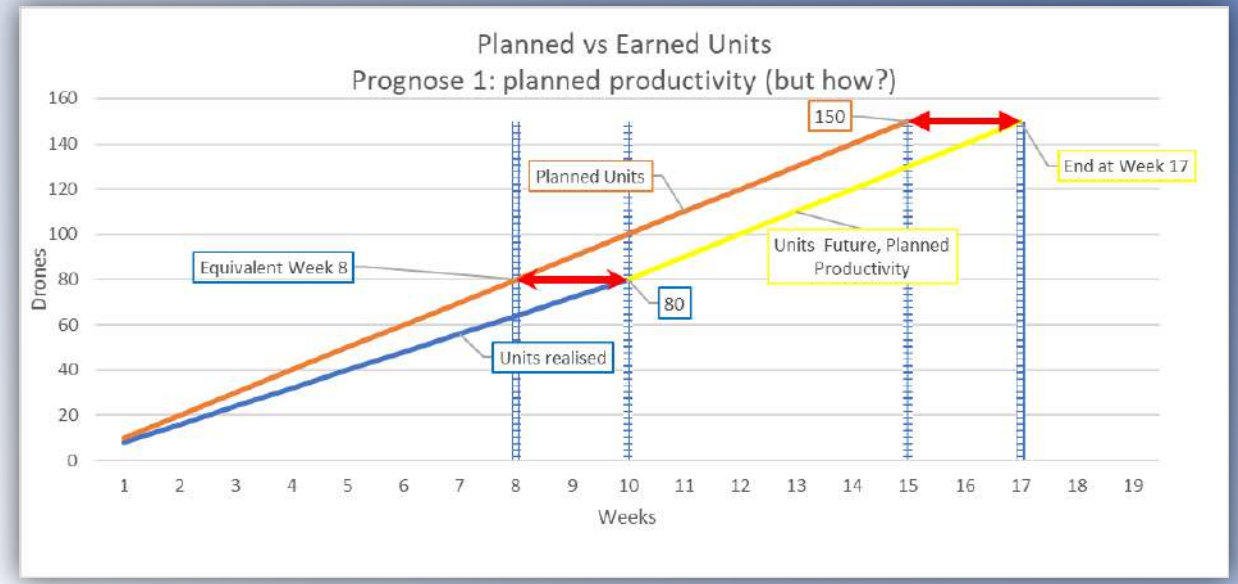
What if we speed up?

To original planned productivity

- We never make up for lost time

- We just not delay any further

Still same 2 weeks delay

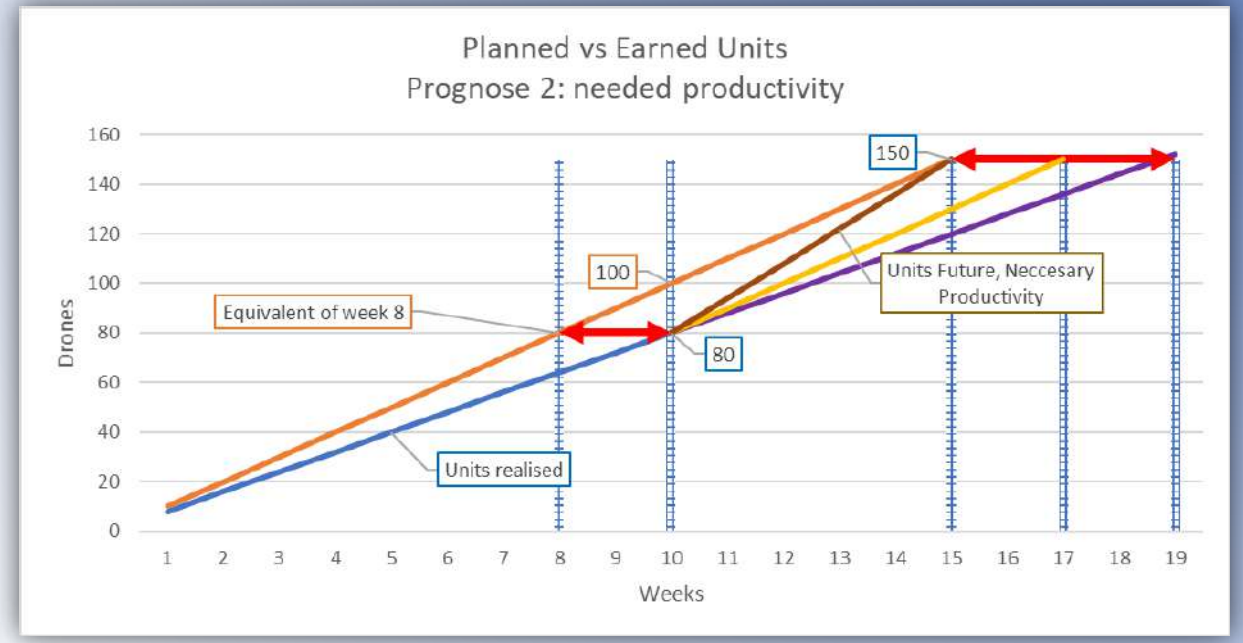


To finish on original time – what to do?

Extreme productivity increase needed

- Week 10:
  - 5 weeks left
- 80 delivered
  - We need to deliver 70 drones more
- We need 14 drones per week
  - From 8 drones per week
  - **Almost double productivity!**

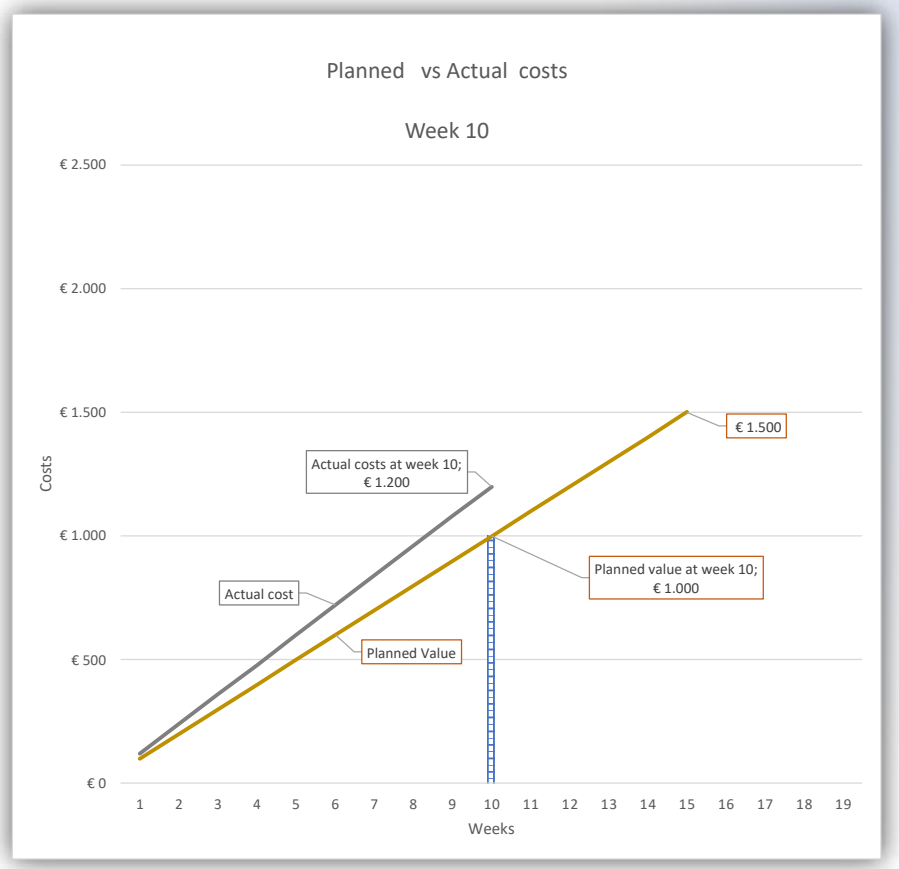
Produce 14 drones per week !!!!!



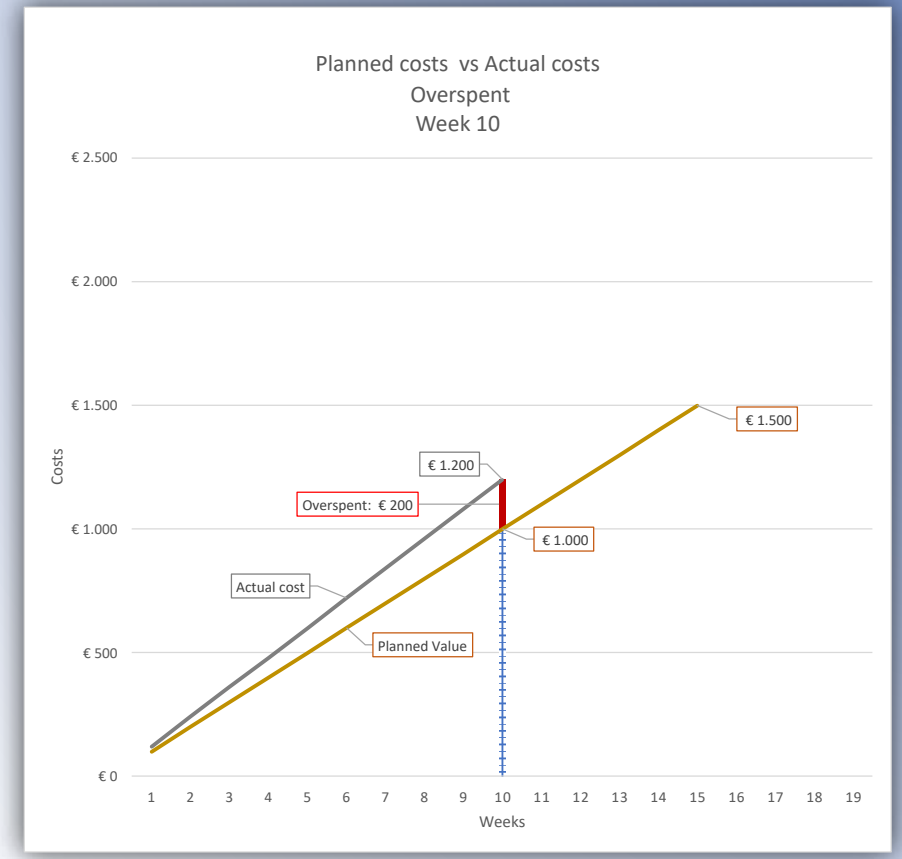
What about money?

Earned value – Actual costs

What did we actually spent in week 10?
€ 12.00,-



Overspent: € 200,-



Applying the same logic - where will we end

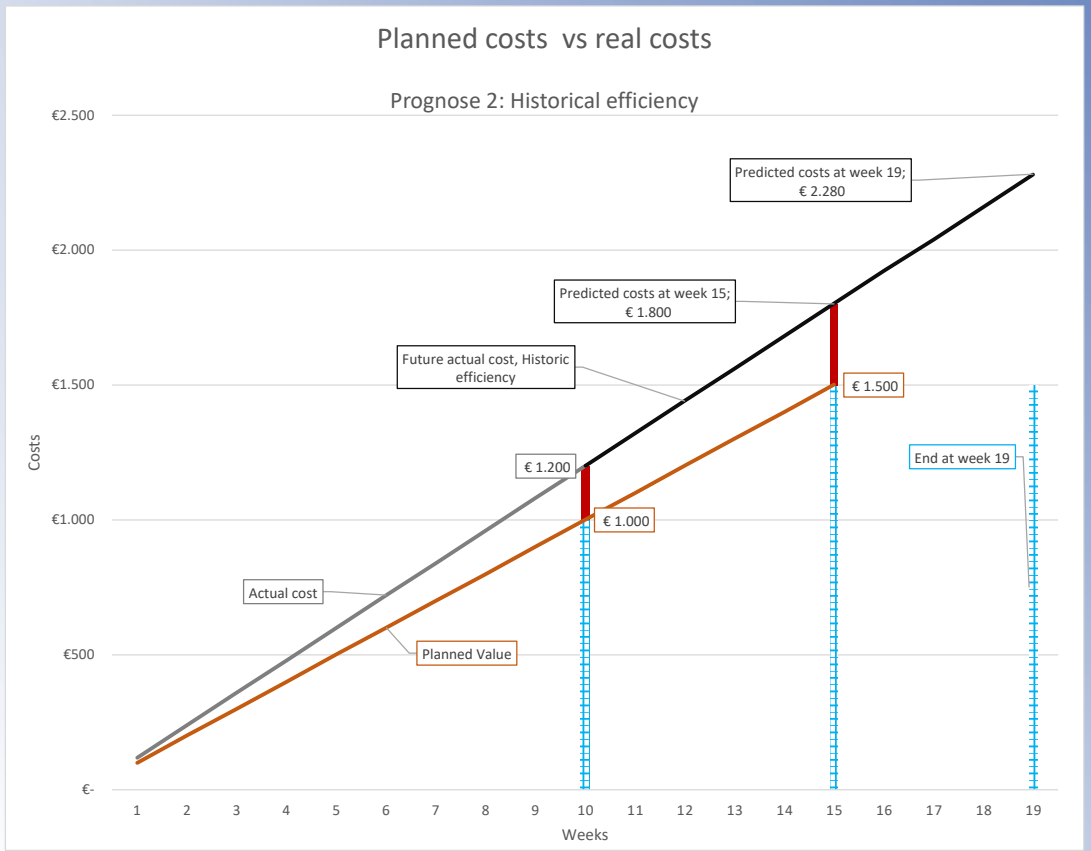
Continuing like this?

- Working until
- **ALL units are produced**

- AKA week 19
  - Because we also delivered not enough drones

- Total predicted costs € 2.280,- at week 19
  - Overspending € 780,-

Overspent at week 15: already € 300,-



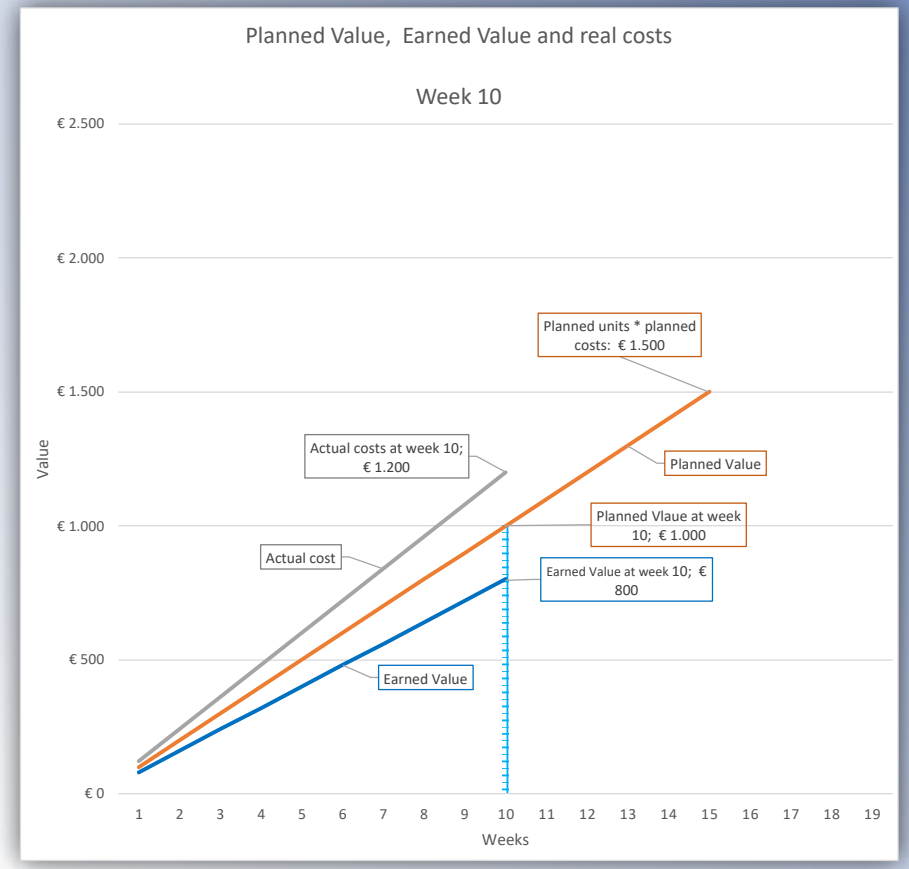
Units is not money, money is not units

Now translating all to monetary values

The plan

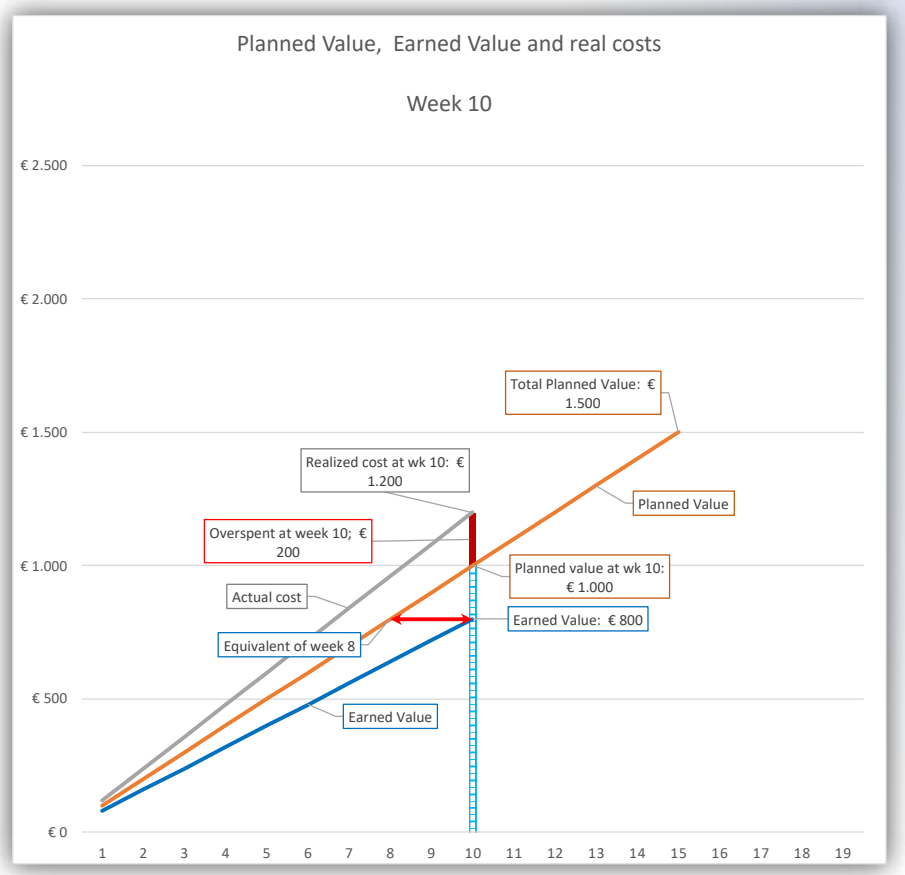
- A unit produced is valued at its theoretically value
- A Drone produced equals a Earned Value of € 10,-

Status at week 10

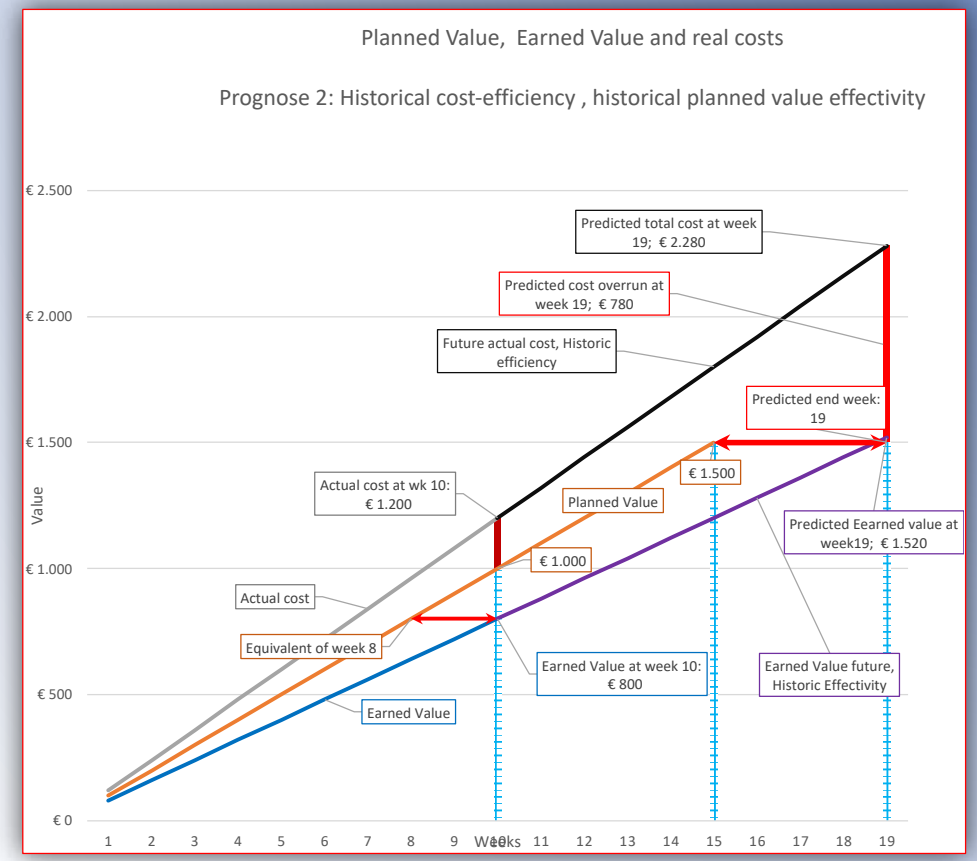


So how does this look?

In week 10 we know what we have: a little late, a little too much



And we predict: to end in week 19 at € 2.280,-



Concluding:

- If you can plan your project in Units_Delivered
- You can predict **DURING** project execution
- Improving your **CONTROL**
- And with that your project **SUCCESS**