Améliorez la qualité de vos logiciels embarqués grâce à l’analyse statique
Developing secure code - Gary McGraw touchpoints

Code review

Penetration testing

Architecture risk analysis
Developing secure code

Code review

Penetration testing

Architecture risk analysis
Automating code review

Code review

with a tool
A code review tool – Polyspace Bug Finder

Identify defects

Enforce coding rules

Produce and monitor quality metrics
Automatic code review – Overall picture

Delivery
Enabling a fix-as-you-go process

Polyspace Bug Finder
Ford deploys static code analysis at enterprise level

Ford Motor Company - Powertrain Controls. Calibration and NVH (PCCN)
Responsible for developing Software for Gasoline/Engine/Driveline Controls Worldwide

200+ Software Developers Worldwide

- Gasoline Engine Controls
  Dearborn, MI

- Transmission and Driveline Controls
  Livonia, MI

- Hand Code + Model Based Processes
  Windows + Linux Development Environments

- Diesel Engine Controls
  Basildon, Essex, UK

Watch video
Solar Impulse saves 1 to 2 man-year with Polyspace

Watch video
Finding bugs

Polyspace
Bug Finder
Where does the find-and-fix process stop?
The magic box – Myth or reality?

Source code

Polyspace Code Prover
Proving code vs. finding bugs

Polyspace
Code Prover
Polyspace Code Prover - Highlights

```c
static void pointer_arithmetic (void)
{
    int array[100];
    int *p = array;
    int i;

    for (i = 0; i < 100; i++) {
        *p = 0;
        p++;
    }

    if (get_bus_status() > 0) {
        if (get_oil_pressure() > 0) {
            *p = 5;
        } else {
            i++;
        }
    } else {
        i = get_bus_status();
    }

    if (i >= 0) {
        *(*(p - i) = 10;
    }
}
```

**Green**: reliable
- safe pointer access

**Red**: faulty
- out of bounds error

**Gray**: dead
- unreachable code

**Orange**: unproven
- may be unsafe for some conditions

Check Distribution
Proven: 95%
Robust verification of software components

Quality gate

SW modules

Integrated SW
Contextual verification of application
Key takeaway

Automate Code Review

*with Polyspace tools*