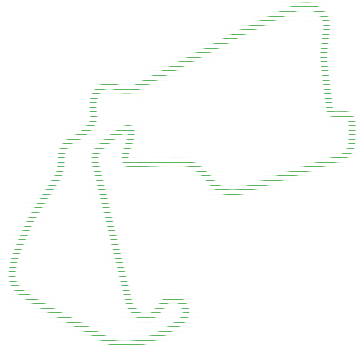


F1 IT

Martin Hingley, ITCandor

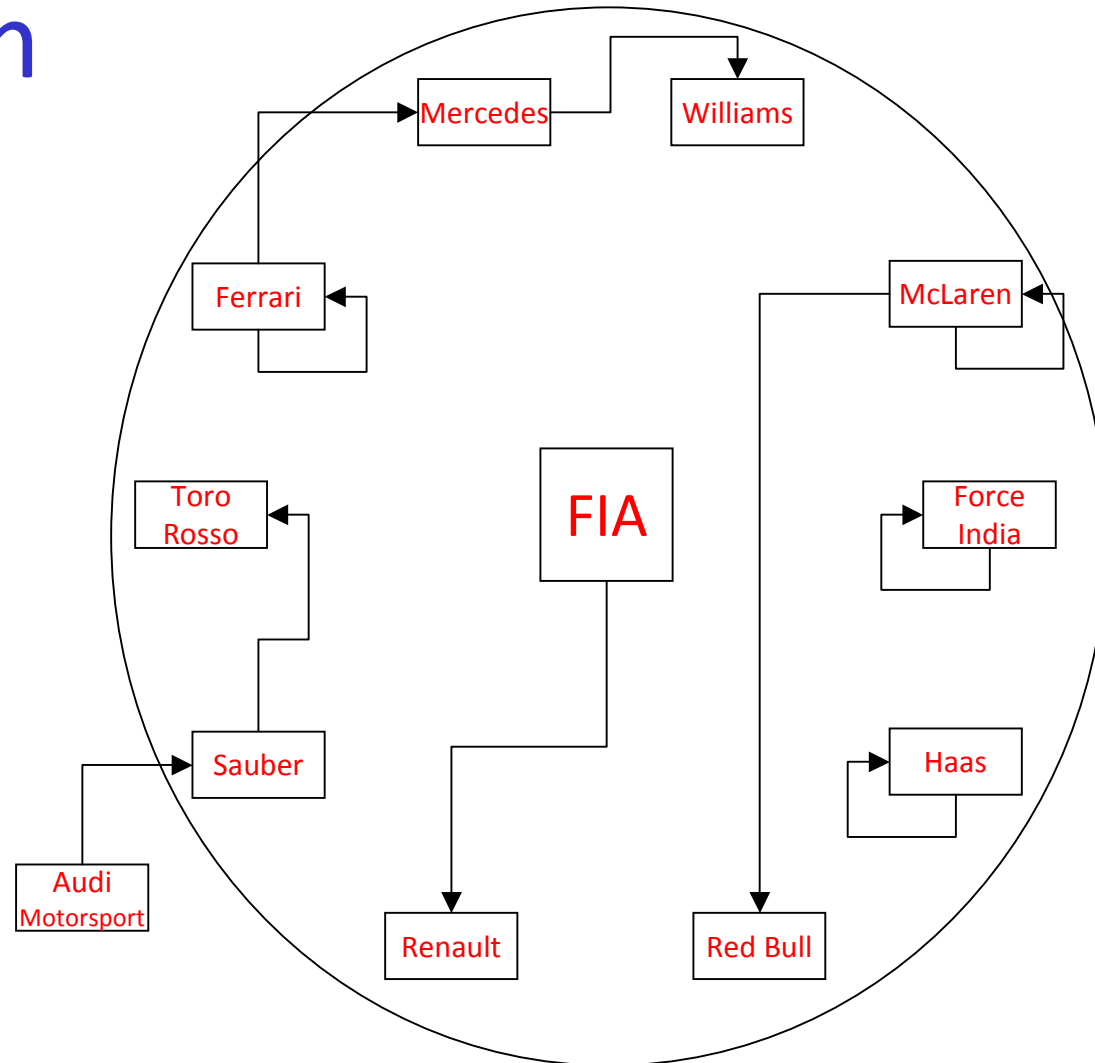


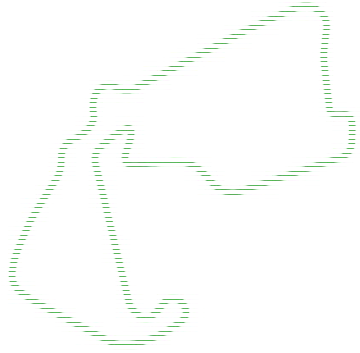
Agenda

- Motor racing challenges
- Related IT and data issues
- F1 IT solutions
- Lessons for the rest of us

Where the F1 technical directors came from

- A technical sector akin to aerospace/automotive
- Only one came from outside
- This is an 'incestuous' sport!





Motor racing challenges

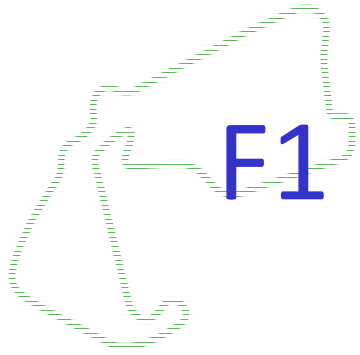
- To win races and championships
- To design a viable, reliable car
- To make continuous, incremental performance improvements
- To handle interactive communications with fans
- To raise enough money from sponsors to go racing





Related IT and data issues

- **Data governance** – digitizing paper processes, storage tiering
- **Cyber security** – keeping plans secret, protecting fan data
- **Big data analytics** – making the most of aerodynamic and telematic data
- **3D/Solid printing** – designing, prototyping new components
- **Cloud** – moving apps securely to save on data center hardware
- **Converged infrastructure** – reduce the weight, cost and complexity of systems transported to races
- **Green** – making up for a carbon emitting sport



F1 IT solutions – handling data securely

- Fast access to archived telemetry and CFD data
- GDPR compliance essential for fans' social media experiences
- A need for trusted cloud service providers
- Linking F1 with sister businesses
- Avoiding \$100m fines!





F1 IT solutions – race car design

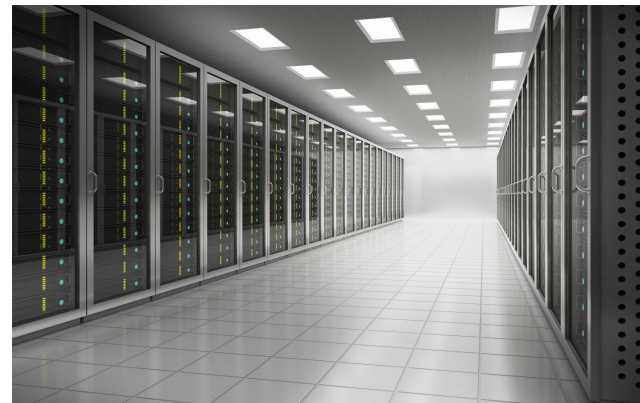
- Annual changes in design affected by experience and regulations
- HPC Supercomputer wind-tunnel simulations – efficiency rather than raw speed
- Advanced use of CAD/CAM and PLM applications
- 3D printing for prototype and some working parts





F1 IT solutions – at the circuit

- Standard data telecommunications
- Converged Infrastructure (CI) and HCI systems for compact, ‘mobile’ computing
- Avoiding the ‘Bernie’ transportation tax!
- Pitwall tyre pressure process





F1 teams and IT partners

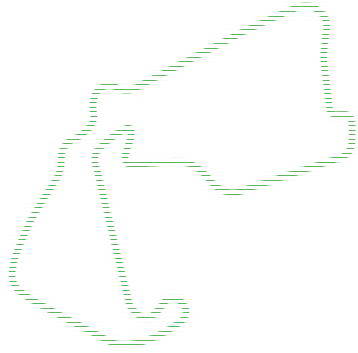
| F1 team | IT partners |
|----------------|--|
| Ferrari | Kaspersky Labs, Infor, Lenovo, AMD |
| Force India | Telcel, NEC, Infinitum, Acronis, SAS |
| Haas | none |
| McLaren | SAP, NTT Communications, Logitech, Dell Technologies |
| Mercedes | Epson, Qualcomm, Pure Storage, TIBCO, Tata |
| Red Bull | Citrix, Siemens, AT&T, IBM, HPE |
| Renault | Microsoft, Computacenter, Siemens |
| Sauber | HPE |
| Toro Rosso | Acronis, Siemens |
| Williams | Acronis, BT, Symantec |



Lessons for the rest of us

- Few of us work in high-profile industries with simple aims
- Looking at other industries can help with IT strategy
- Iterative processes and supplier support are needed even in technical sectors
- ‘Digital transformation’ is an on-going process





Further information

- Visit www.itcandor.com
- Contact info@itcandor.com
- Engage with us on F1 related and other IT subjects!