

BAE SYSTEMS

Industrial Experience with an Engineering Perspective

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Introduction (Programming background)

- è School/University Never saw a computer
- è 1970's Algol 60, Coral 66, **HPL, HP Basic, FORTRAN 4**
- è 1980's **FORTRAN 77, PASCAL**, APL, 68000 Asm
- è 1990's **MODULA II, Fast Basic**, Quick Basic, **Oberon/L**
- è 2000's **Component Pascal**, Scheme

- è I am **not** a computer scientist
- è I am **not** a software engineer

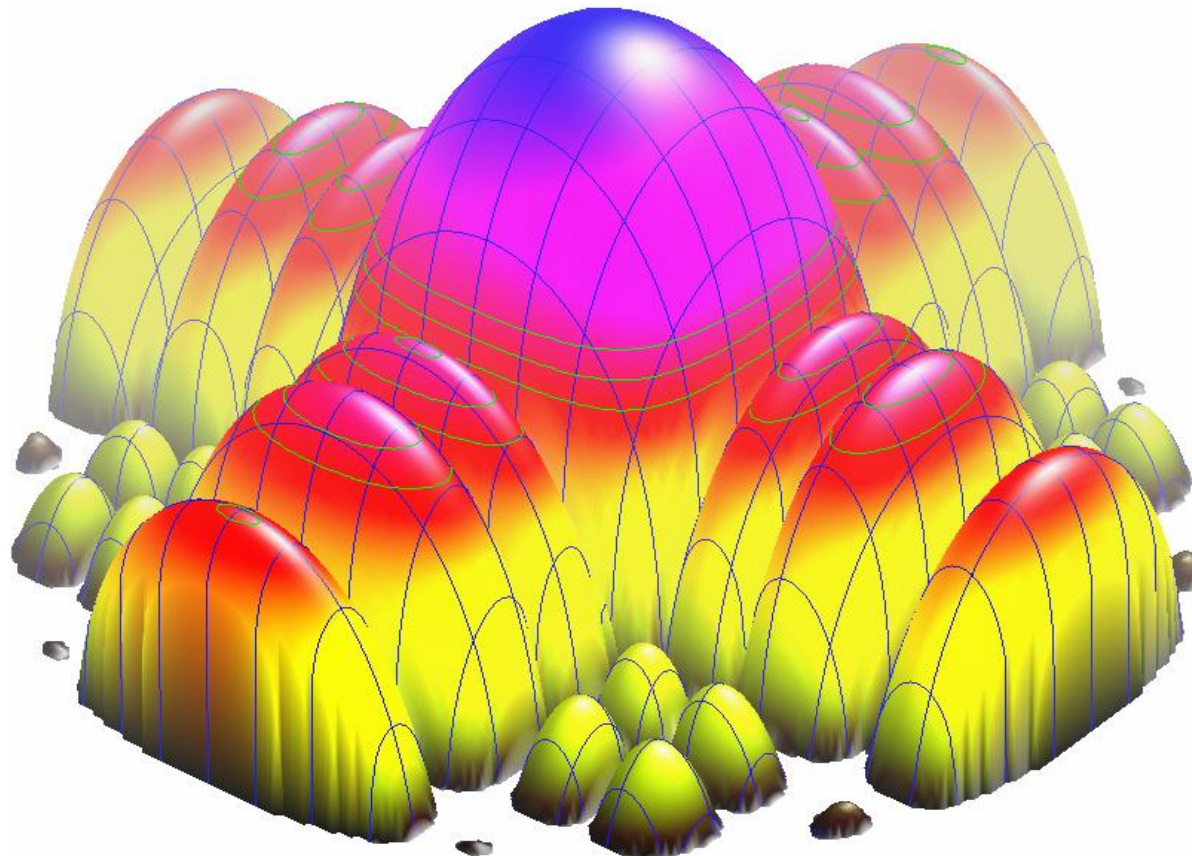
- è I **am** a radar systems designer/analyst
- è I programme to **solve** radar **problems** with a mathematical flavour

An example model component - Antenna

- è Models antenna behaviour - a crucial radar performance definer
- è Does not replace 'dedicated' codes used by antenna specialists
- è Provides good 'first - order' fidelity, but not self justifying
- è Easy to use / interactive / configurable / extensible / comprehensible
- è Easy to integrate into larger / more specific system models

- è Demonstrates characteristics of the BlackBox environment
- è Exemplifies using a BlackBox engineering / graphics library

On-line demonstration of Antenna Component



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Concluding remarks

- è The languages I've used have significantly evolved ...
 - u **Raises** the practical **complexity limit**
 - u Makes working within this limit (much) more **efficient**
- è Strong type (and other) **safety is freedom** (from bug chasing drudgery)
- è Component Pascal is small, **simple**, supports abstraction
 - u Code is **HUMAN** readable / **comprehensible**
 - u Layers of ABSTRACTION control / bound complexity
- è BlackBox framework:
 - u Solid / Reliable / **Interactive** / Pleasant environment
 - u General purpose language **No limits** (unlike Matlab / Mathcad)
 - u Engineering libraries **Ready for Scientific** / Engineering **use**
- è Oberon microsystems
 - u Commercial supplier gives confidence to professional users
 - u Provides: (excellent) **support** / consultancy / training / custom components

Any Questions ?

- è Please ask about implementation, or to see code
- è Feel free to ask about radars / antennae
- è What does O-O imply in practice?
- è Please do **NOT** ask about Maxwell's equations !

è Thanks ...

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