



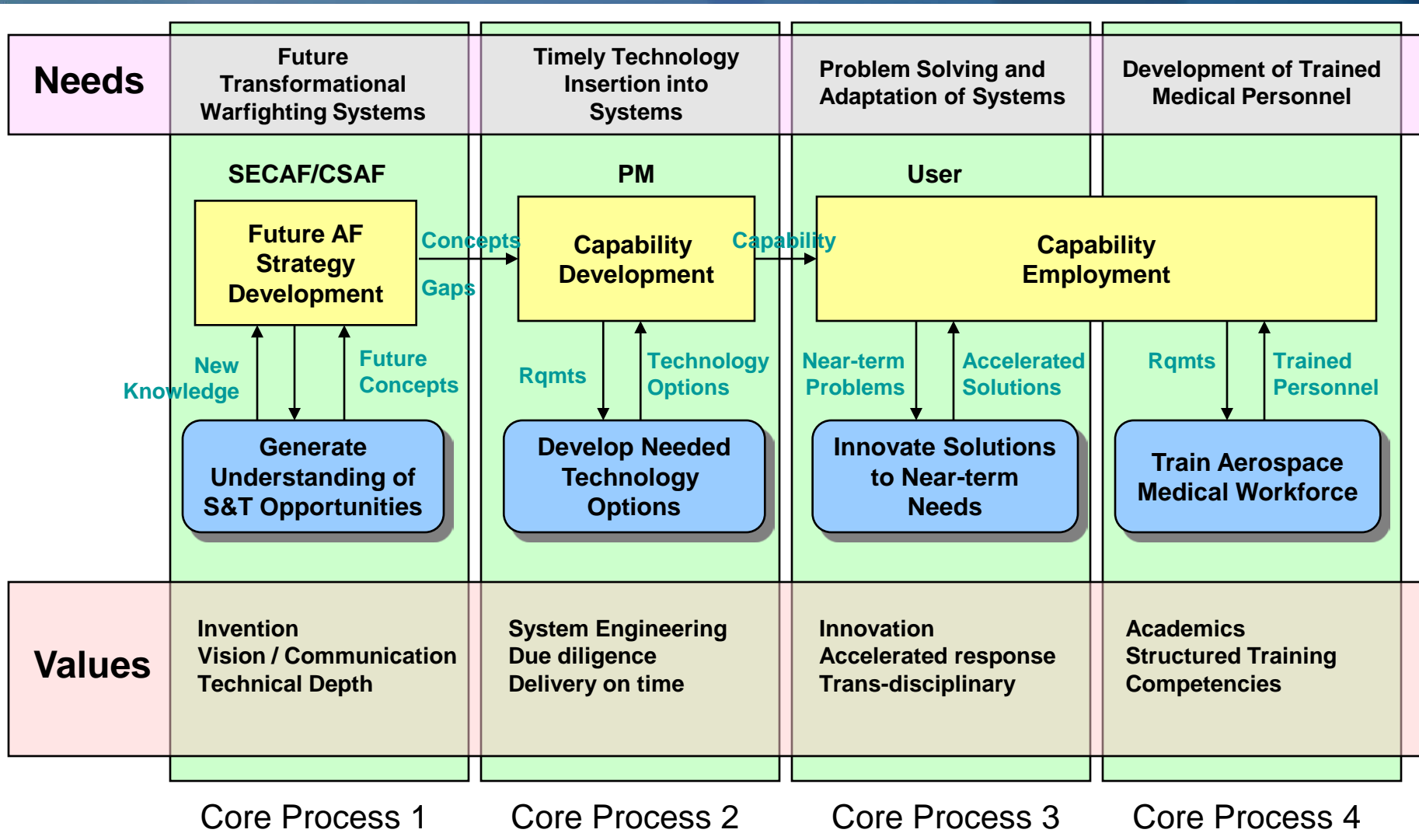
Innovate Solutions to Near Term Needs

AFRL Core Process 3





AFRL's Core Processes





in•no•vate (in ə vāt): to introduce something new, to make changes, to transform

Precursor stage:
Time is right, enabling factors are in place

Invention stage

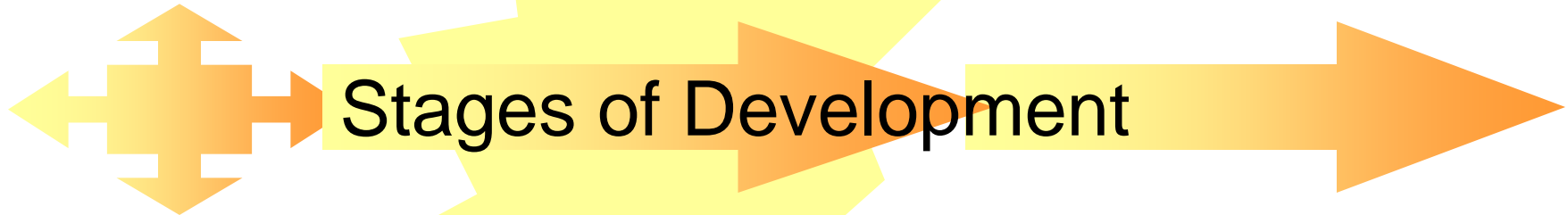
Development stage:
Transformation to marketable products

Maturity stage

False pretenders

Obsolescence and Antiquity

Ray Kurzweil, National Inventors Hall of Fame, 1948



Stages of Development

Invention
Generation of new ideas and techniques

Innovation
Ideas transformed into marketable products and services

Diffusion
Products and services distributed across markets

Joseph A Schumpeter, Economist, 1883-1950

Innovation = Invention + Exploitation



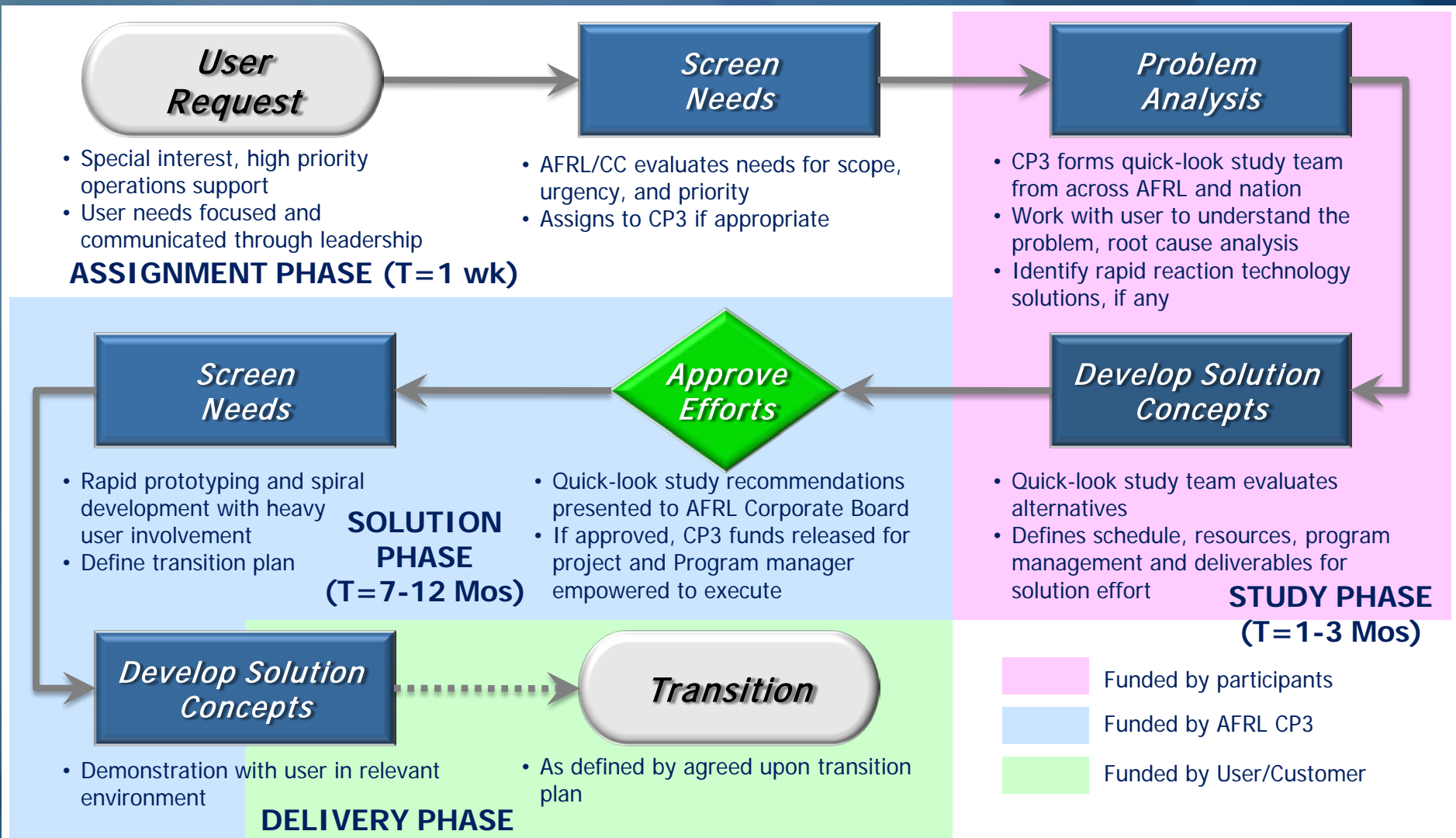
AFRL's Core Process 3 (CP3)

- AFRL interacts with users to identify near-term warfighter needs – user submits needs to AFRL leadership
- Leverages breadth and depth of knowledge within the laboratory and its “innovation network”
- Delivers accelerated demonstration of technology solutions to address warfighters’ needs
- Identifies transition path for solutions

***CP3: A Focused S&T Effort to Accelerate Development
And Demonstration of Technology That Addresses
Near-term Warfighter Needs***



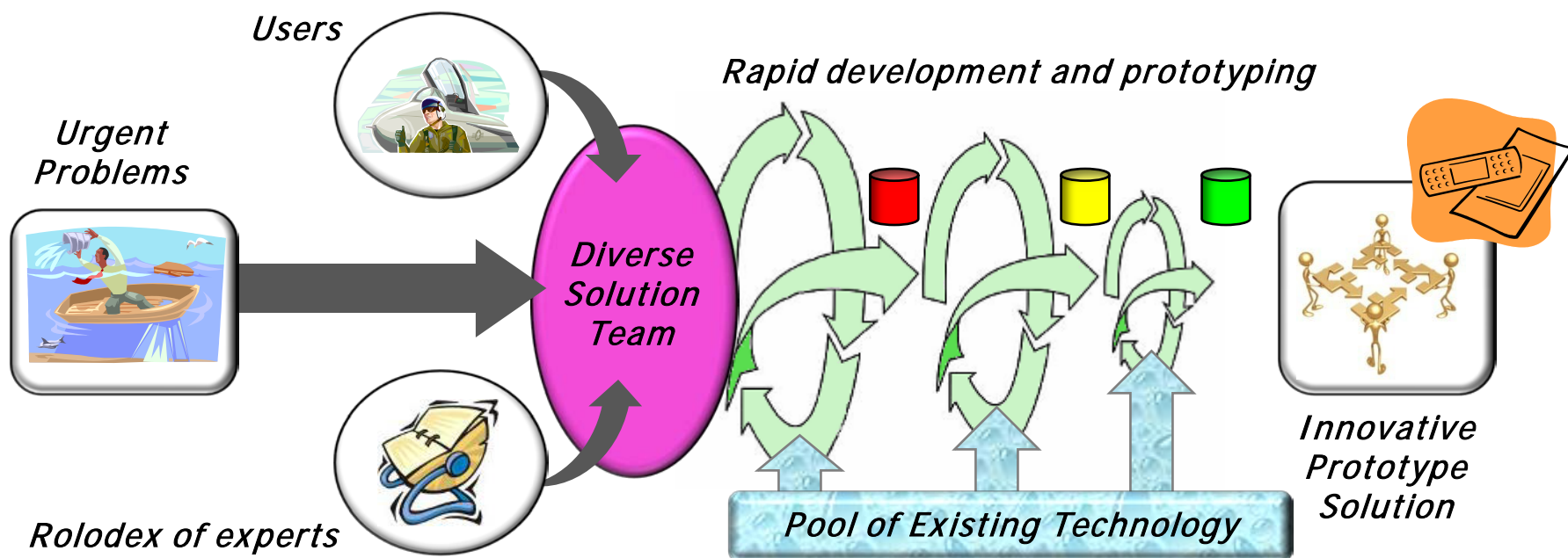
CP3: Innovate Solutions to Near-Term Needs





The Path to Rapid Reaction Solutions

- Diverse team formed from 'Rolodex' of experts
- Close user involvement – users on the team
- Spiral/agile development and rapid prototyping
- Leverage existing and emerging technology
- Lateral thinking; parallel thinking; creative problem solving techniques

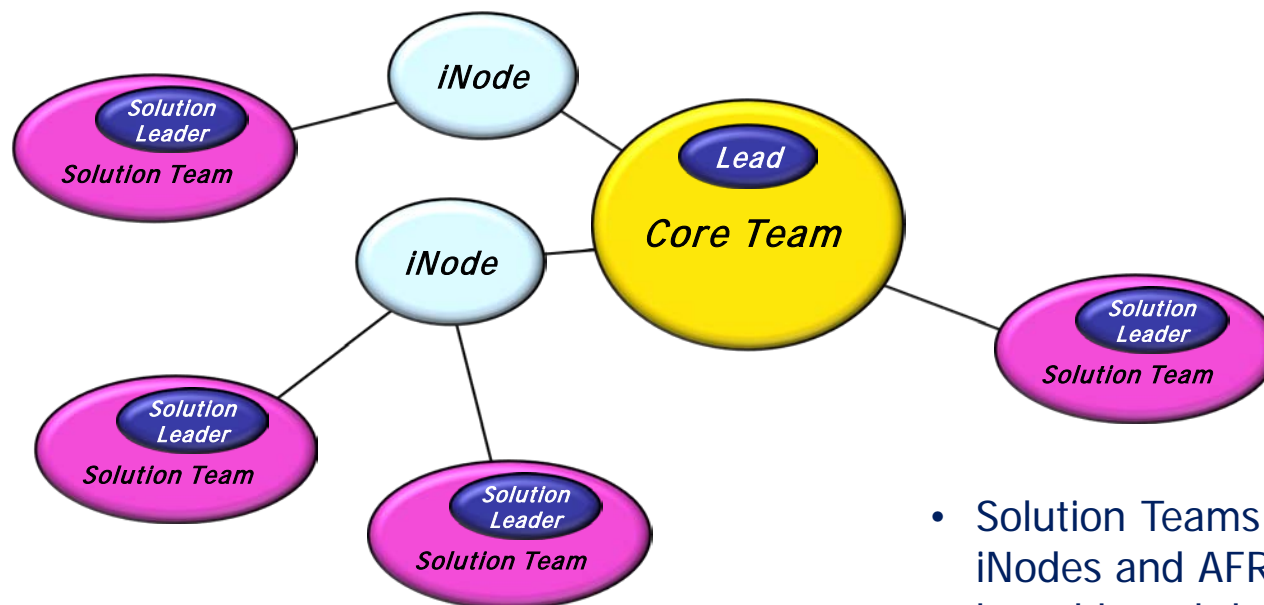




AFRL Innovation Network Organization

iNodes

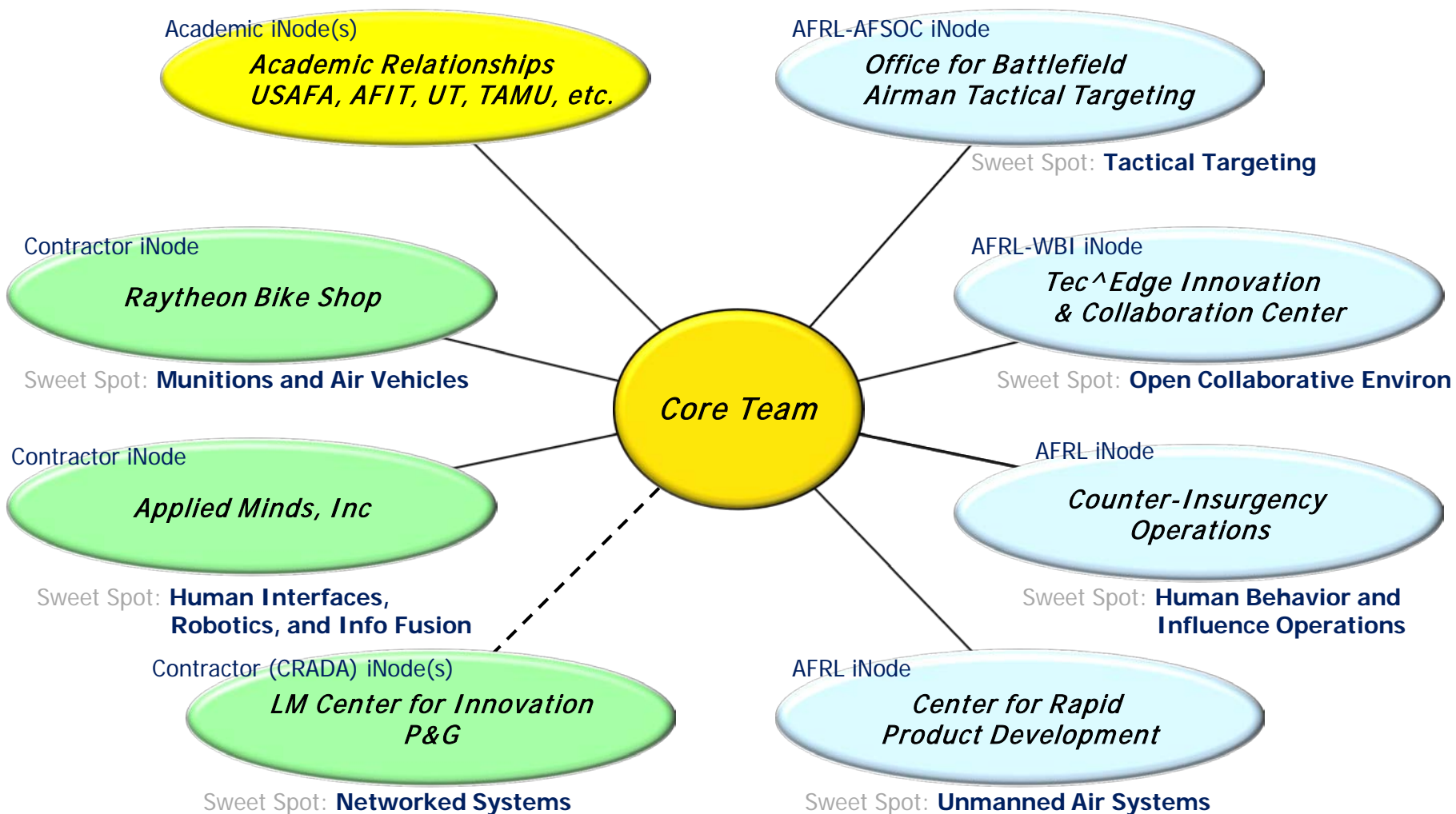
- Small organizational units
- Each with its own competencies
- Each selected to address a class of user needs
- Created and dissolved based on evolving user needs, performance, etc...



- Solution Teams formed from within iNodes and AFRL, drawing from the breadth and depth of AFRL and nation's expertise



Current AFRL Innovation Network





Example CP3 Rapid Reaction Efforts

- **Fleeting Targets (Customer –AFSOC)**
- **Joint Space Operations Center (Customer - OSD)**
- **Ground Hardness (Customer – AFSOC)**
- **Friendly Marker Device (Customers – USAFWC/422 TES and ACC)**
- **IED Detection (Customer – JIEDDO)**
- **Single Pass Airdrop (Customer – AMC)**

CP3 addresses the art of the possible for Space Operations



DoD has urgent need for rapid illustration of the “art-of-the-possible” for a modernized Joint Space Operations Center (JSPOC)

AFRL Quick-to-Demo Solution

- Integration of current and emerging visualization tools, organizational principles, and human factors design
- JSpOC 3.0 Training Facility “Mock-up”



JSpOC 3.0



JSpOC 3.0 Training Facility



CP3 builds prototypes that are ready for operational use

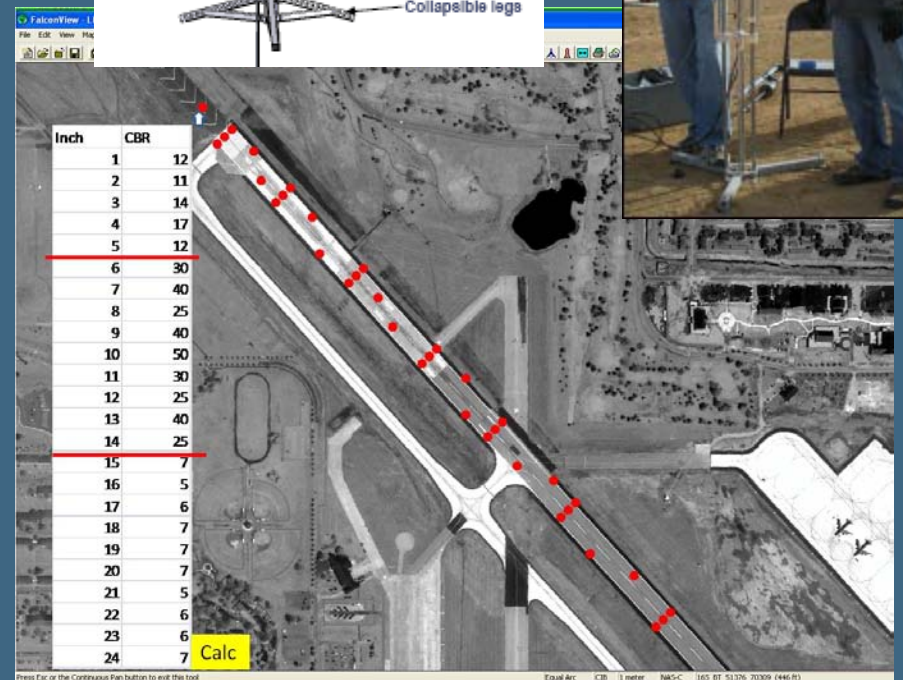
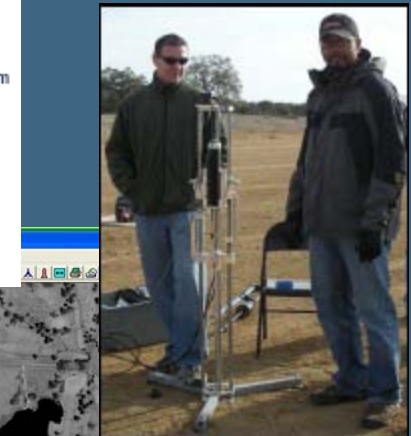
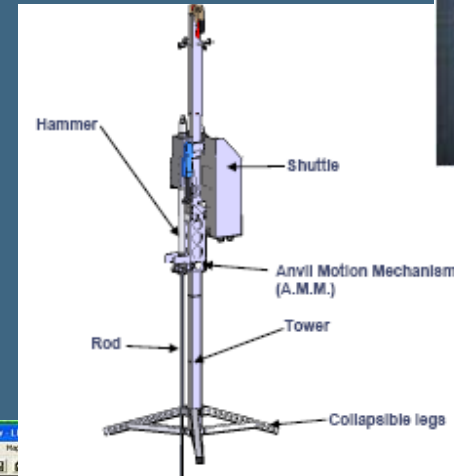
AF has urgent need to rapidly determine ground bearing strength for landing aircraft

AFRL Quick-to-Field Solution:

- Backpackable motorized dynamic cone penetrometer
- Graphically formatted output for rapid display on Falconview

Status:

- Field testable prototype completed
- Extended user evaluations underway



Innovation comes from a creative and inspired workforce



AFRL Challenge Program

- **Challenges motivate teams and deliver solutions**
 - *Capitalize on competitive environment to stimulate innovation*
 - *Tap into energy and bright ideas of junior workforce*
 - *Invaluable opportunity for professional development*
- **Approach:**
 - *Tackle a pressing warfighter need*
 - *Two or more competing teams*
 - *Limited budget and time*
 - *Demonstrate workable prototype system*
- **AFRL Supporting a Variety of Challenges**
 - *Commander's Challenge*
 - *Military Academies*
 - *UT-Austin vs Texas A&M*



Summary

- **AFRL has created Core Process 3 to provide innovative solutions to near-term warfighter needs**
- **Current CP3 projects progressing well with positive user feedback**
- **Transition of projects follows several paths, good results to date**
- **Rapid Reaction Team exploring novel approaches to stimulate innovation within AFRL**

