

# Innovate Solutions to Near-term Needs

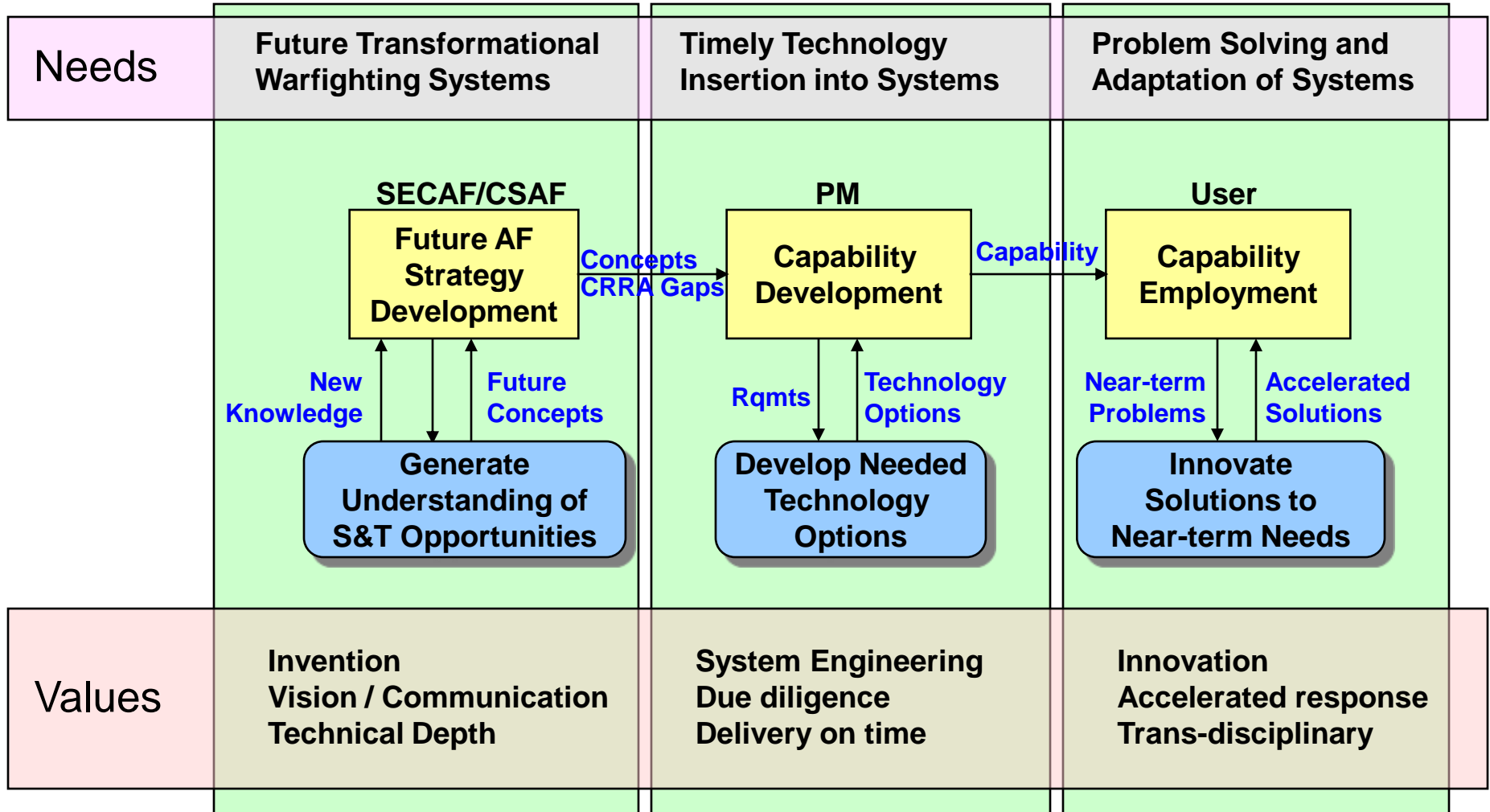
## *AFRL Core Process 3*

*Accelerated Technology to the Warfighter*





# AFRL's Core Processes Aligned with Customer Needs



Core Process 1

Core Process 2

Core Process 3



**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 Phase:  
Create a New Product***



# Some Ideas Shaping Innovation



- **Talk Radio Effect**
- **Eli Lilly and Innocentive**
- **Alexander the Great and Aristotle**
- **Medici Effect**
- **Wisdom of Crowds**



# AFRL's Core Process 3 (CP3)

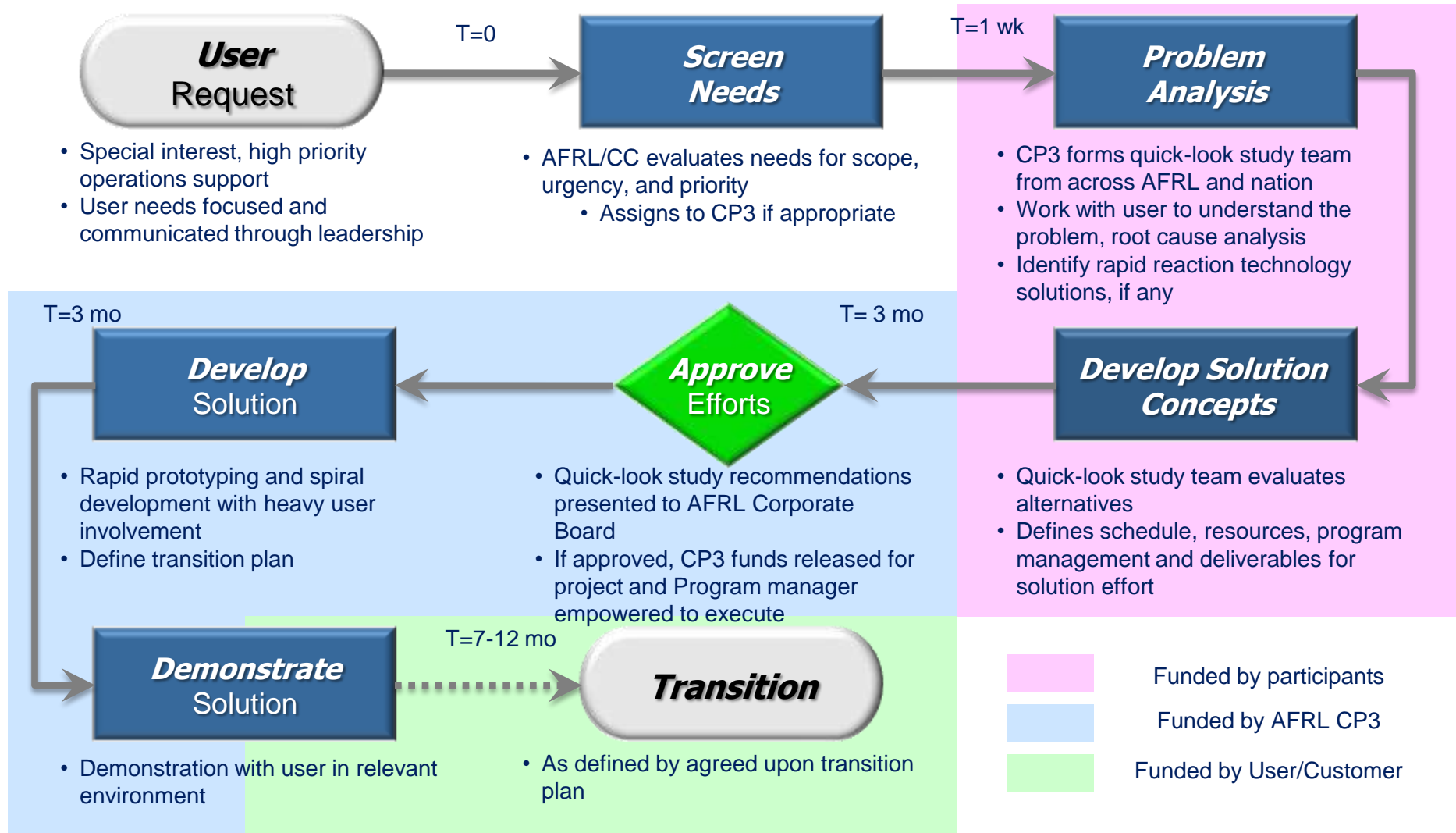


- **AFRL interacts with users to identify near-term warfighter needs – user submits needs to AFRL leadership**
- **Leverages breadth and depth of knowledge within the laboratory and its “innovation network”**
- **Delivers accelerated demonstration of technology solutions to address warfighters’ needs**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

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



# Innovate Solutions to Near-Term Needs



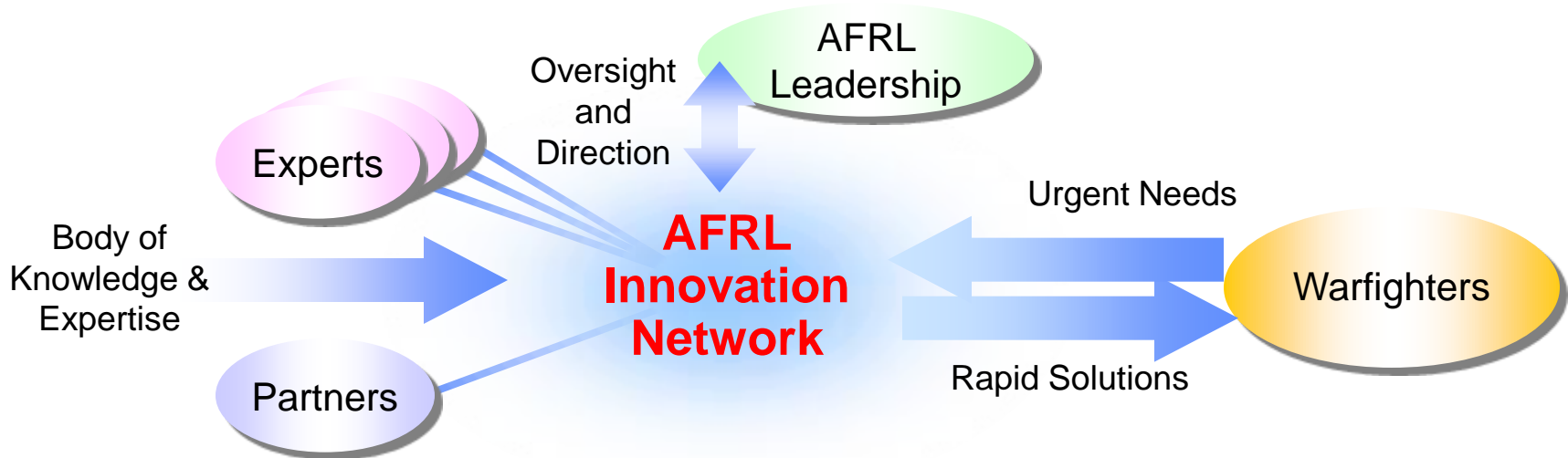


# AFRL iNet (Innovation Network)

## Fostering Flexible, Adaptive Creation of Solutions



- **Organizational framework to rapidly tackle problems with small, agile groups**
  - Large, informal network of diverse background, talent and expertise
  - Ad-hoc formation of empowered teams
- **Operational framework to stimulate innovation**
  - Infrastructure for rapid, intensive collaboration of disparate talents
  - Autonomous, independent, separately operated projects
- **Cultural framework to enable creativity**
  - Allows risk – outside the box thinking – failure is acceptable
  - Rewards based on products, not following procedures



**Technology Innovation for the Warfighter**

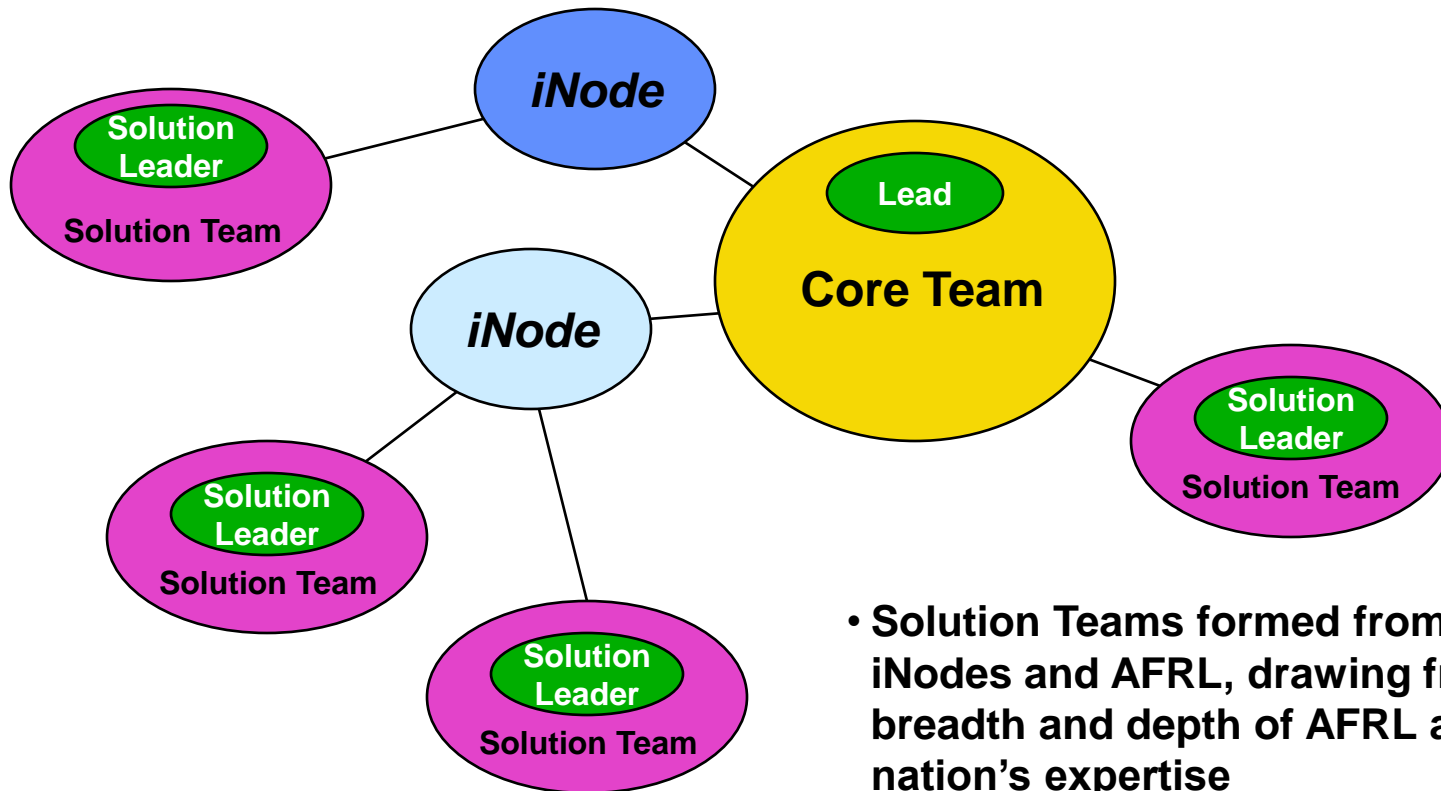


# Innovation Network Organization



## • *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

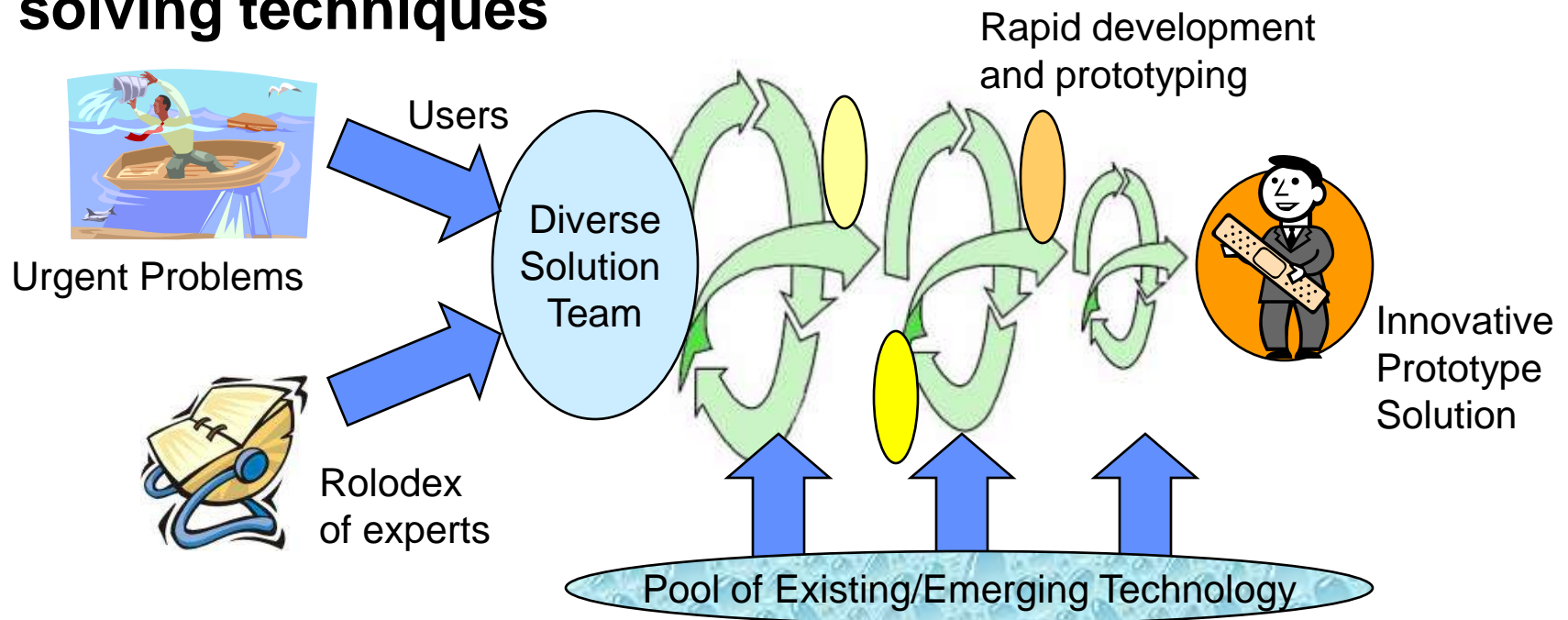


# Near Term Solutions

## Methods to Stimulate Innovation



- 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 and creative problem solving techniques





# Example CP3 Effort Helicopter Brownout



## AFSOC/CC Urgent Need

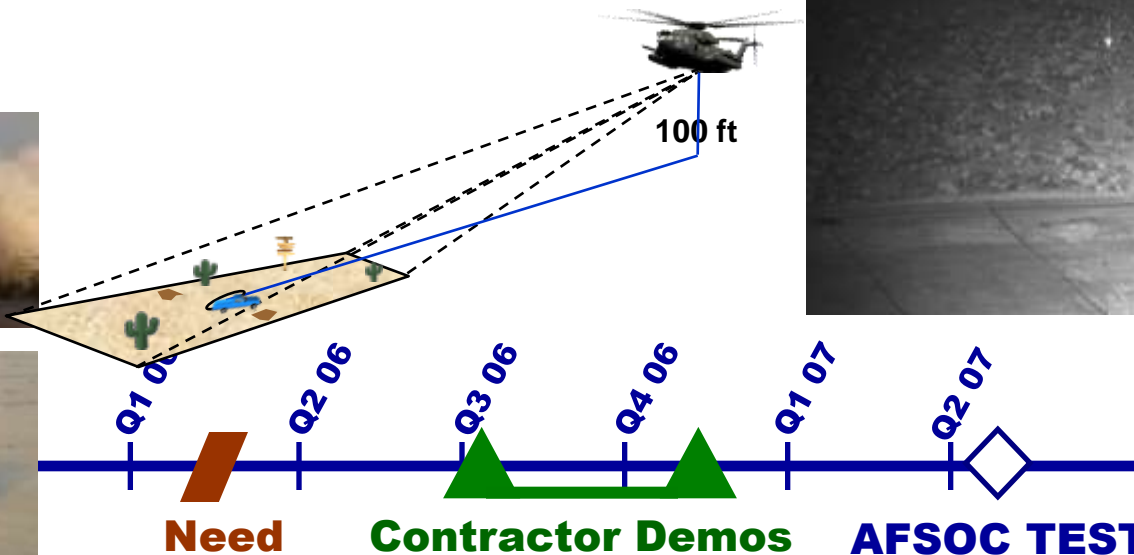
- Brownout conditions have contributed to helicopter landing difficulties
- Especially a problem in current deployment operations

## AFRL Quick-to-Field Solution

- "See and Remember": Image landing zone (LZ) before brown-out occurs
- Georegister hi-res image
- Zoom/warp image to provide "virtual VFR" landing cues



F4, 1200 gain





# AFRL Commander's Junior Workforce Challenge



- **2006 Challenge: Non-lethal Vehicle Stopper**
  - Rewarding team experience at final competition for vehicle stopper in Arizona, 13-17 Nov
  - Team Kirtland was overall winner, but both teams performed exceptionally and had outstanding solution concepts





# 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**