



# Technology Transfer Fundamentals (from a DOE: FFRDC Lab Perspective)

SAND2007-5229P

**Brent A. Burdick, Ph.D.**  
**Licensing and IP Management**  
**Albuquerque, New Mexico**  
**505-844-4966**  
**[baburdi@sandia.gov](mailto:baburdi@sandia.gov)**





# Technology Transfer Process

---

- **Identify new technologies**
- **Protect rights and title to technologies through patents and copyrights (create intellectual property)**
- **Create development and commercialization strategy (or strategies)**
- **Implement commercialization strategy (or strategies) through licensing to existing private sector companies and/or create new start-up companies based on licensed technology**



# Factoid

---

**Roughly 2/3 of all granted and issued US patents have had no commercial success or practical application (remain unused)**



# Why Do Technology Transfer?

---

- **Recognition and practical use of valuable discoveries**
- **Comply with federal regulations**
- **Attract and retain talented scientists**
- **Develop local and US economy**
- **Attract sponsored research**
- **Support corporate mission**
- **Generate revenue to support further R&D**



# Important Federal TT Legislation

---

- **Stevenson-Wydler Act (1980)**
  - Federal Labs participate in and budget for for TT
- **Bayh-Dole Act (1980)**
  - Empowers universities in TT in terms of retaining title to inventions under federal funding
- **Federal TT Act (1986)**
  - Establishes Federal Laboratory Consortium (FLC) for Technology Transfer and enables CRADAs (Cooperative Research and Development Agreements) for collaborative R&D with private industry



# What is Intellectual Property?

---

- **“Any product of the human mind protected under property rights” (and it is property like a house, boat, car, etc.)**
  - **Patents:** exclude others from using, selling or making an invention or discovery
  - **Copyrights:** exclude others from copying, selling, performing, displaying or making derivative versions of works of authorship
  - **Trademarks:** exclude others from using similar marks. Distinguishes the goods of a trader from competitors (e.g. Coca-Cola, Kodak, Xerox, Nike, etc.)
  - **Trade Secrets:** know-how or expertise that requires protection from public disclosure and dissemination

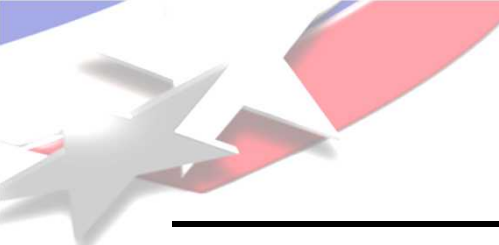


# What is Sandia?

---

- **Sandia Corporation is a subsidiary of Lockheed Martin Corporation**
- **Sandia Corporation operates Sandia National Laboratories for the US DOE (Department of Energy)**
- **Is a “for profit” corporation (Sandia Corporation) incorporated in Delaware**
  - **Facilities and equipment are funded by US DOE in Albuquerque, NM and Livermore, CA**
  - **8500 employees, thirty % Ph.D. level**
  - **Programs are funded by DOE, other federal agencies & industrial partners**
  - **Employees are Sandia Corporation (Lockheed Martin) employees**
  - **Revenues of ~ \$2.4 B / year**
  - **A Federally Funded Research and Development Center (FFRDC)**





**Albuquerque, New Mexico**



**Kauai Test Facility  
Hawaii**



**Tonopah Test  
Range,  
Nevada**



**Yucca Mountain  
Nevada**



**WIPP,  
New Mexico**



**Pantex, Texas**



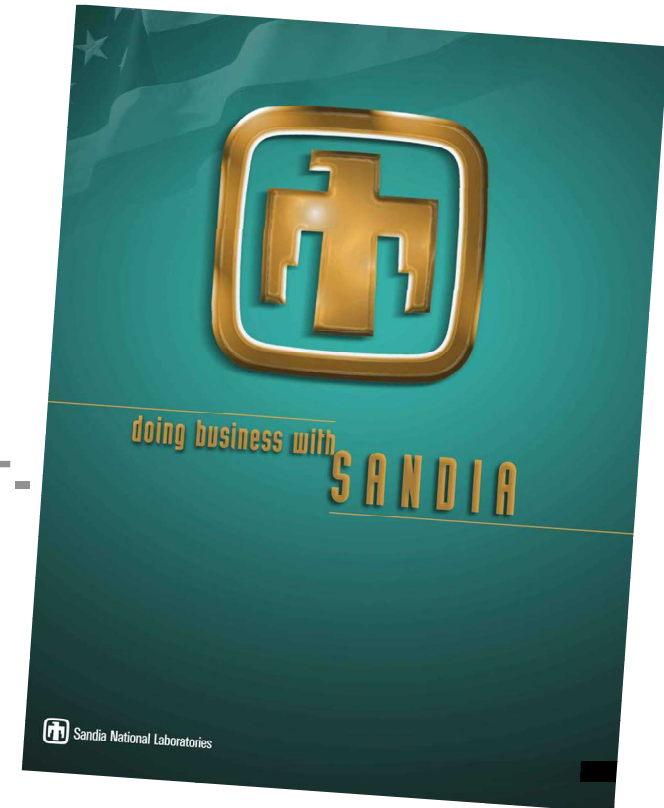
**Livermore, California**



# Doing Business with Sandia (or any FFRDC)

---

- **CRADA (Cooperative Research & Development Agreement)**
- **WFO (Work for Others)**
- Designated Capability (DC) Agreement
- User Facility (UF) Agreement (like CINT-Center for Integrated Nanotechnology)
- Commercial License Agreement





# Doing Business with Sandia (or any FFRDC):

## CRADAs (Cooperative R&D Agreements)

- Sandia and one or more partners outside the Federal government (usually from industry, non-profit organizations, or academia) **collaborate** and share the results of a jointly conducted research and development project
- General Provisions:
  - Each party may take title to its own CRADA-generated intellectual property
  - Partner has option to obtain license to Sandia's CRADA-generated intellectual property in limited field of use on agreed-upon reasonable terms and conditions
  - CRADA-generated information can be protected for up to five years
  - CRADA non-disclosure provision protects proprietary information



# **Doing Business with Sandia (or any FFRDC): WFOs (Work for Others)**

---

- **Sandia performs work on a reimbursable basis for a non-Federal entity (NFE) sponsor. Sponsor is from private industry, state/local government, non-profit organization, or academia:**
- **General Provisions**
  - **Allows Sandia to perform mission-related, reimbursable work.**
  - **Sponsor can access Sandia's unique capabilities, facilities, and equipment to validate or improve technologies.**
  - **Sponsor is provided a minimum of a non-exclusive, paid-up license to practice Sandia's subject inventions.**
  - **Title to Sandia's subject inventions can be assigned to sponsor under certain conditions.**
  - **Agreement provisions protect proprietary information.**



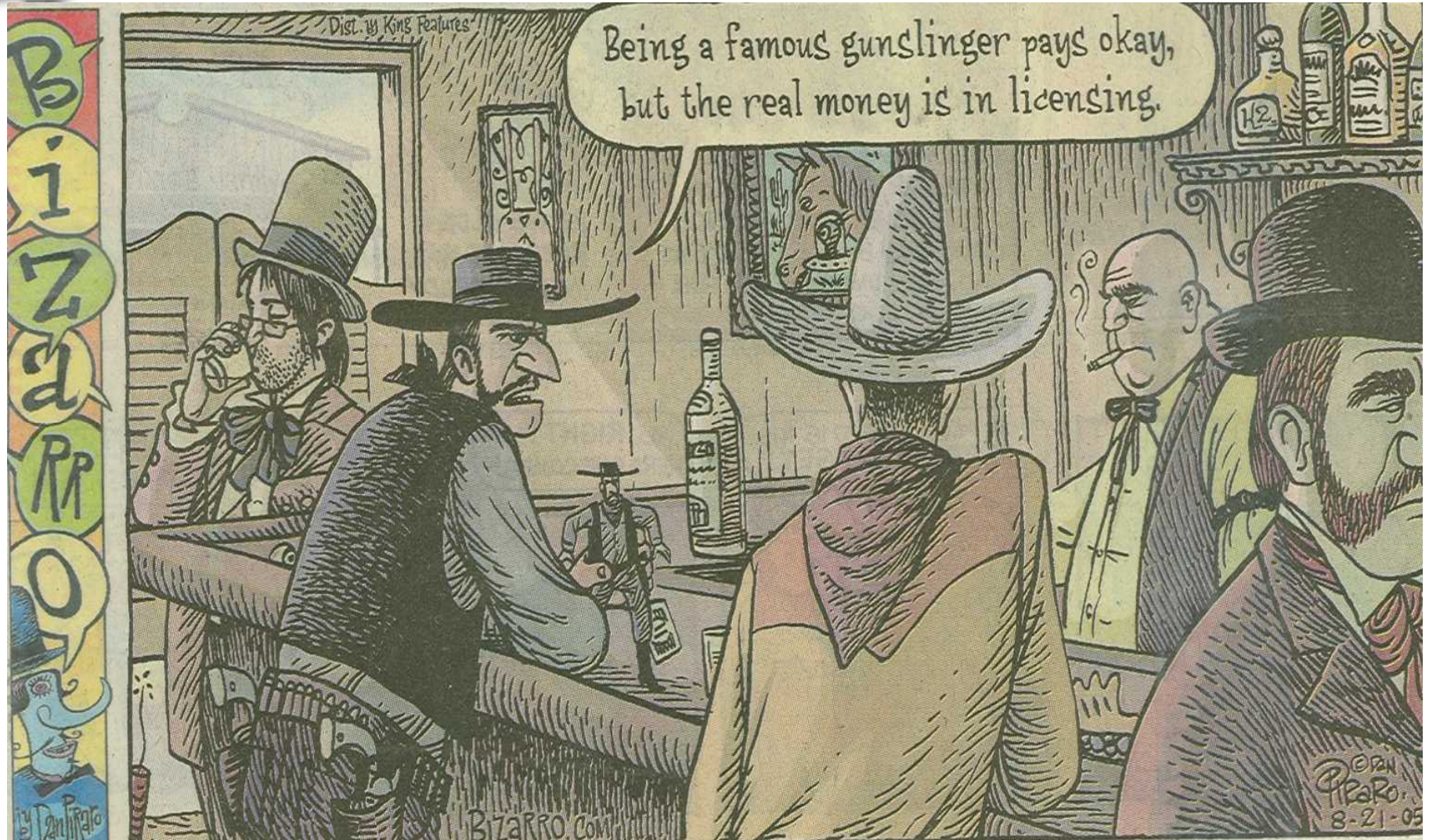
# Doing Business with Sandia (or any FFRDC): General CRADA/WFO Requirements

---

- **Work**
  - **cannot compete** with capabilities in the private sector
  - **must benefit DOE** and tie to Sandia's mission
  - **cannot adversely impact DOE programs** or create future burden for DOE
- **Written statement of work**
- **Acceptance of legal terms and conditions**
  - Liability/indemnification
  - IP provisions
  - Etc.
- **Approval by DOE**
- **Payment must be received before work commences**
- **Government retains non-exclusive, paid-up, royalty-free license to all agreement-generated intellectual property for government use**



Licensing in the wild, wild West (as in New Mexico) as we know it.....





# Licensing Considerations

---

- **Value of IP licensed (is it incremental, enabling, disruptive technology?)**
- **Exclusive or non-exclusive rights?**
- **Field of Use restrictions?**
- **Sublicensing rights?**
- **License duration and termination due to cause/breach**
- **Milestones or diligence provisions**
- **Royalties, minimum royalties, up-front license fees**
- **IP infringement duties (licensor, licensee?)**

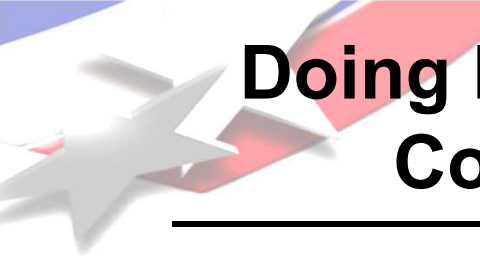


# **“Win-Win” Always Recommended**

---

- Licensing technology *always* requires a win-win scenario built in to succeed
- Licensor and licensee share in rewards based on agreed upon terms and conditions
- Both licensor and licensee assume equivalent risks and appropriate responsibilities
- Licensor and licensee agree on business model to develop and commercialize technology
- A license agreement is a legally binding contract for the duration



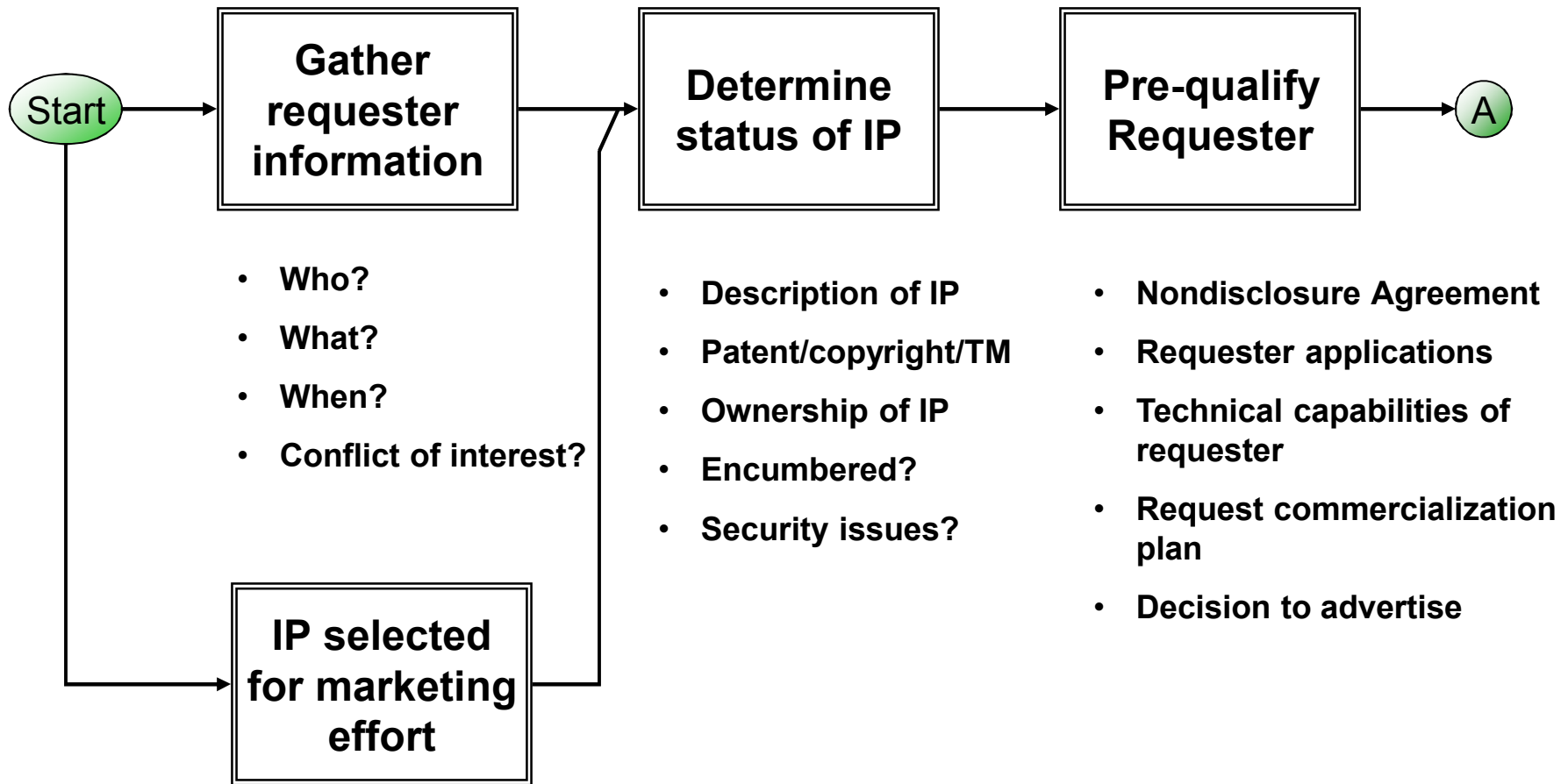


# Doing Business with Sandia (or FFRDC): Commercial License Agreement

---

- Sandia conveys intellectual property rights to a non-Federal partner (licensee) through a license agreement. Intellectual property includes patent applications, patents, copyrights, and trademarks
- General Provisions
  - Ensures that commercial interests of partner are legally protected.
  - General Requirements
    - Business plan information and basic information about the licensee's company.
    - Government retains non-exclusive, paid-up, royalty-free license to all intellectual property for U.S. government use.
    - The following negotiable items appear in every license agreement:
      - Level of exclusivity.
      - Field(s) of use.
      - U.S. government march-in rights (exclusive licenses only).
      - U.S. manufacturing requirements (or benefit to U.S.).
      - Sandia rights to licensee-created software (as applicable).

# Licensing Process at Sandia (or FFRDC) (1)



Summary Level

# Licensing Process at Sandia (or FFRDC)(2)



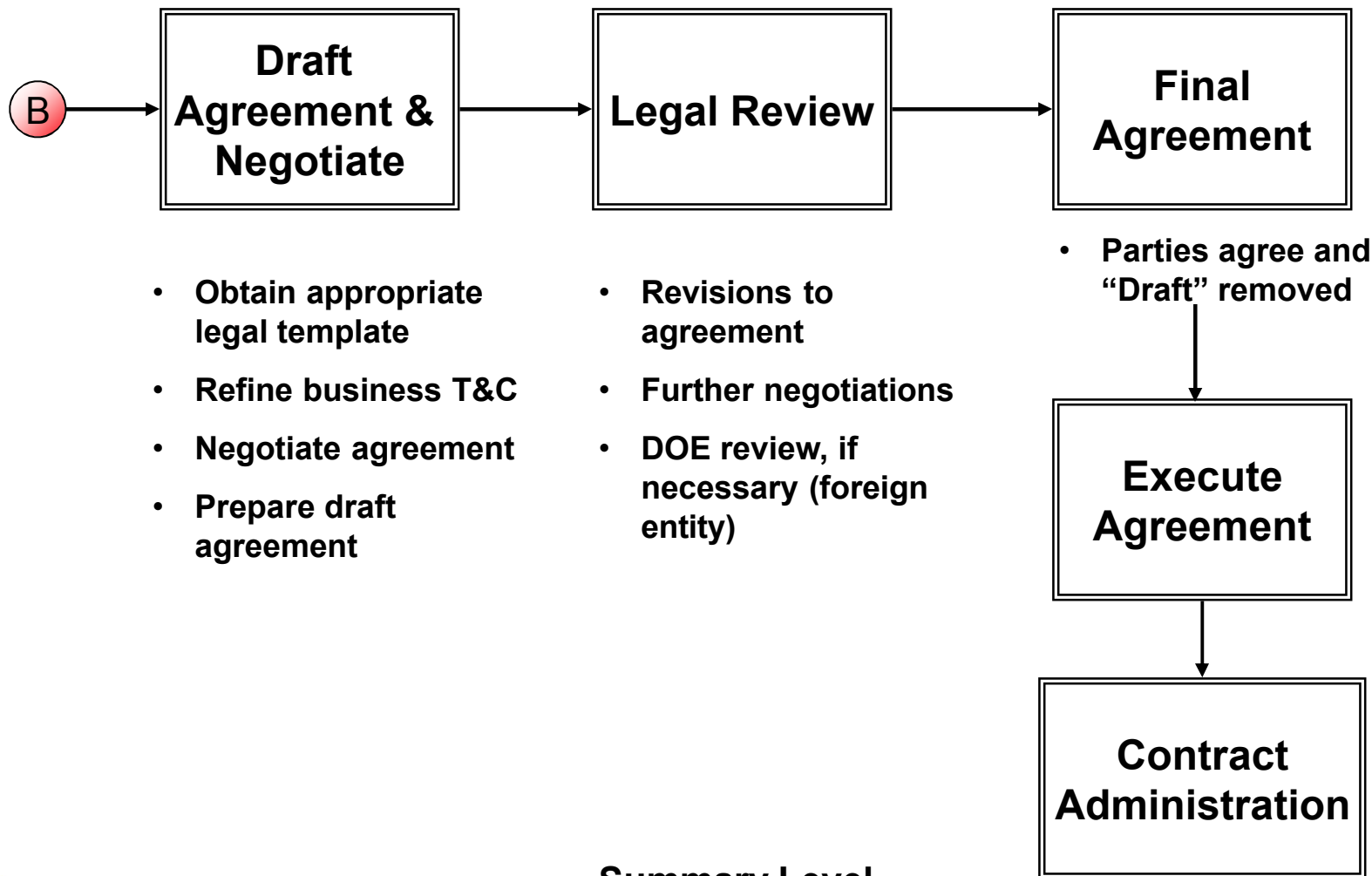
- Tech. line objectives in licensing
- Evaluate technology in identified markets (better, faster, cheaper)
- Determine corporate objectives
- Competing requesters (Fairness)

- Evaluate requester's ability to commercialize
- Evaluate competing potential licensees
- Financial viability

- Establish preliminary business terms and conditions
- Offer to negotiate

Summary Level

# Licensing Process at Sandia (or FFRDC) (3)



Summary Level