National Aeronautics and
Space Administration

John H. Glenn Research Center
Lewis Field
Cleveland, OH 44135–3191

December 2, 2011

Reply to Attn of: G

Miley
Fralick
Lyons
Ercegovic
Dunn

Mr. Steven B. Krivit
369-B Third Street, Suite 556
San Rafael, CA 94901

Subject: Freedom of Information Act (FOIA) Request No. 12-GRC-F-00006

This letter is to advise you that a releasability determination has been made regarding your FOIA request for a copy of all slide presentations from the Low Energy Nuclear Reactions (LENR) Innovation Forum workshop held at NASA Glenn Research Center (GRC) on September 22, 2011. This determination has taken into consideration the relevant statutes, case law, and guidance, as well as comments from GRC's technical staff and the submitters. Accordingly, it has been determined that the documents will be released in part. The basis for this determination is set forth below.

Our technical organization conducted a search for responsive records. A total of eight slide presentations were found. On October 28, 2011, you were notified via e-mail that two of these presentations were from NASA Langley Research Center (LaRC) in Hampton, Virginia; one was from NASA Marshall Space Flight Center (MSFC) in Huntsville, Alabama, and that the FOIA request was being transferred in part to both LaRC and MSFC to provide a direct response to you. On November 9, 2011, MSFC released their document in full to you. On November 25, 2011, LaRC released their two documents in full to you, as well.

The GRC is making the final determination for the five remaining slide presentations. Four of these presentations will be released in full (Valerie Lyons' presentation entitled, "Power, Energy Storage and Conversion"; Gustave Fralick's presentation entitled, "LENR at GRC"; George Miley's presentation entitled, "Nuclear Battery Using D-Clusters in Nano-Materials—Plus Some Comments About Prior H2-Ni Power Cell Studies"; and Dave Ercegovic's slide presentation entitled, "NASA's Radioisotope Power Systems and Technologies"). The last slide presentation presented by Jim Dunn entitled, "Commercializing Disruptive Technology on a 'Fast Track'," will be released in part. Pages 17-26 will be withheld in their entirety under exemption 4 and 5 of the FOIA, 5 U.S.C § 552(b). Exemption b(4) protects proprietary and confidential information; and exemption b(5) protects predecisional information.

There is no charge for providing you this information.

You may appeal this initial determination to the NASA Administrator. Your appeal must (1) be addressed to the **Administrator, National Aeronautics and Space Administration, Mail Stop: FOIA, Room 9R17, 300 E. Street SW, Washington, DC 20546**; (2) be clearly identified on the envelope and in the letter as an "Appeal under the Freedom of Information Act (FOIA)"; (3) include a copy of the request for the Agency record and a copy of this initial determination; (4) to the extent possible, state the reasons why you believe this decision should be reversed; and (5) be sent to the Administrator within 30 calendar days of the date of the receipt of this initial determination

If you have any questions, please contact Angela Pierce, FOIA Officer, at (216) 433-2813, or via e-mail at foia@grc.nasa.gov.

James M. Free
Deputy Director

Commercializing Disruptive Technology on a 'FastTrack' !

Jim Dunn
Energy Technology Consultants
Sept 2011
CONFIDENTIAL

What is a Disruptive Technology ?

- A DT is a technology that had a dramatic, rapid and visible impact on a market or industry (vs. sustaining techs, and incremental improvements)
- Examples: The wheel, telephone, X-ray, microwave, IC/Micro's, the Internet, Cell Phones, Pacemaker, DNA, CD's/DVD's, Nanotech, LED's, Dig. Cameras
- Truly innovative **"game changers"**
- Innovative products, processes, and services that provide '**exponential improvements**' in the value received by customers, and foster new industry

Why are DT's important?

- DT's create new industry, markets, jobs and users
- DT's foster innovation and entrepreneurship
- Often Require New Pathways from Lab to Market
- More risks due to market uncertainty & Impact
- Leapfrog typical price/performance metrics
- New design and user interface parameters
- Difficult to predict market success or failure

DT success examples

- TNT – plastic explosives - Thermite
- Pong – video games
- CAT scanner
- Fuel Cells – NASA - Bloom - ?
- Toyota Prius - Hybrid era

DT Examples - Failures

Dean Kamen's 'slingshot'

Segway Mobile Technology

Classic Failures - Autos

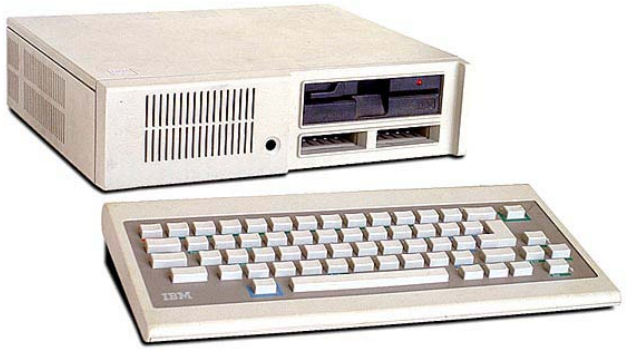
- Ford's Edsel - 1958

- Delorian

- Stirling engine
- The Air Car – France

Consumer product failures

- Sony Betamax - 1975
- Polaroid instant home movies
- IBM PC Jr. – w/cartridge 1983
- Cold Water Detergents (PG)
- HP Tablet TouchPad (2011)



Elements of successful DT adopters

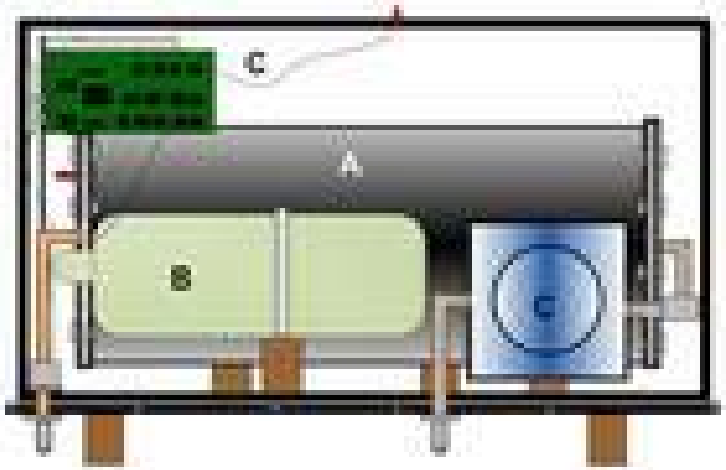
- **Small Agile co's** - Large companies do not deal well with radical innovation. They resist change and risk of failure

- **Rapidly growing technology driven companies -** represent less than 5% of US companies but account for over 70% of Net new jobs. Thus they drive the US economy.

- **Rapid rate of technology change** – Nearly 90% of all engineers and scientists that have ever existed , are alive today.

- **Unique elements of successful DT commercialization:**
  High quality managers,
  High quality investors,
  Solid intellectual property, IP**,** and
  High Passion among team.

New DT – LENR ?



LENR Technology Candidates

- Rossi E-Cat
- Piantelli - Nichenergy
- Widom – Larsen Theory
- Black Light Power – Hydrinos
- Broullion Systems
- Defkalion - ?
- Jet Technology (Schwartz)
- Other ?

Rossi – Foccardi Team

Piantelli – Nichenergy team

Options for commercialization

- Traditional IP Dev. and licensing to select group
- Develop and produce Core Technology and offer market specific licenses to many licensees
- Open source with control over proprietary reactant /media - (razor blades)
- **Create R&D consortium** to further develop and commercialize on ‘Fast Track’ basis

Goals for LENR commercialization

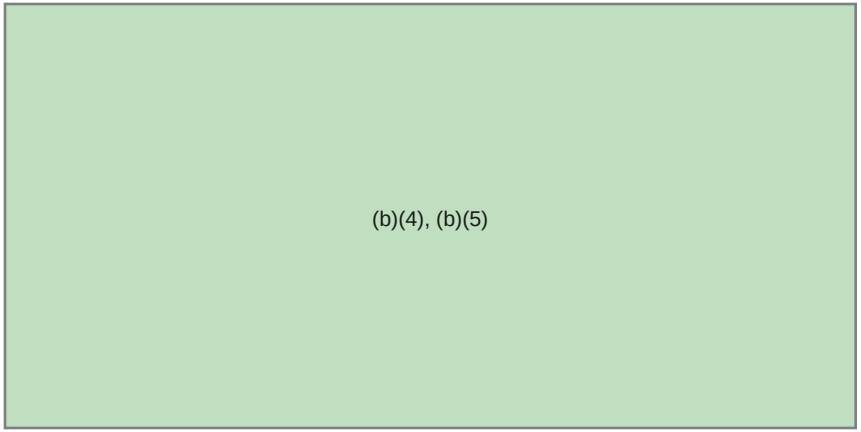
- Develop and Characterize phenomena & Scale up
- Create max. market apps in shortest time
- Create thousands of **New Jobs**
- Bring Energy Tech. leadership back to USA
- Develop new high energy density solutions
- Help NASA create new impetus for **Mars mission**
- Help reduce our dependence on fossil fuels/oil
- Begin to reduce Carbon emissions
- Provide a basis to develop a new **US Energy Plan**

Why is LENR so important ?

- Create new opportunity for Fossil-free Energy
- Huge impact on our economy and job creation
- Address climate change and carbon emissions
- Bring low cost energy to third world countries
- Initiate a whole new field of research and development of new products
- Revitalize Research @ NASA & national labs

‘Fast Tracking’ Risks

- Convincing Licensees and Partners to adopt
- Market prep. and introduction/timing
- Customer & Market acceptance
- Ramp-up issues, if tech takes off
- Regulatory and permitting issues
- Push-back from existing techs being displaced
- Innovators Dilemma - Market dynamics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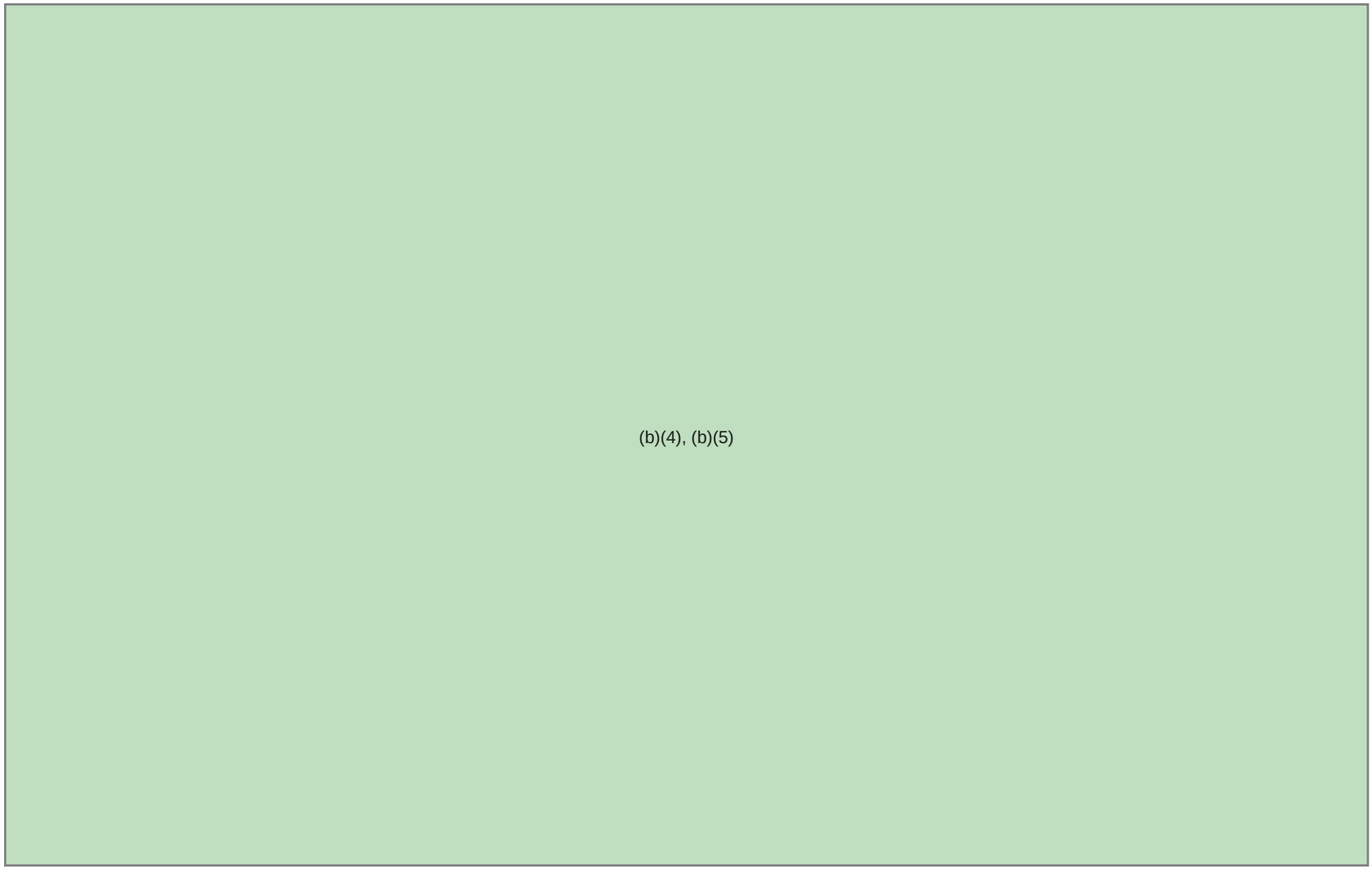
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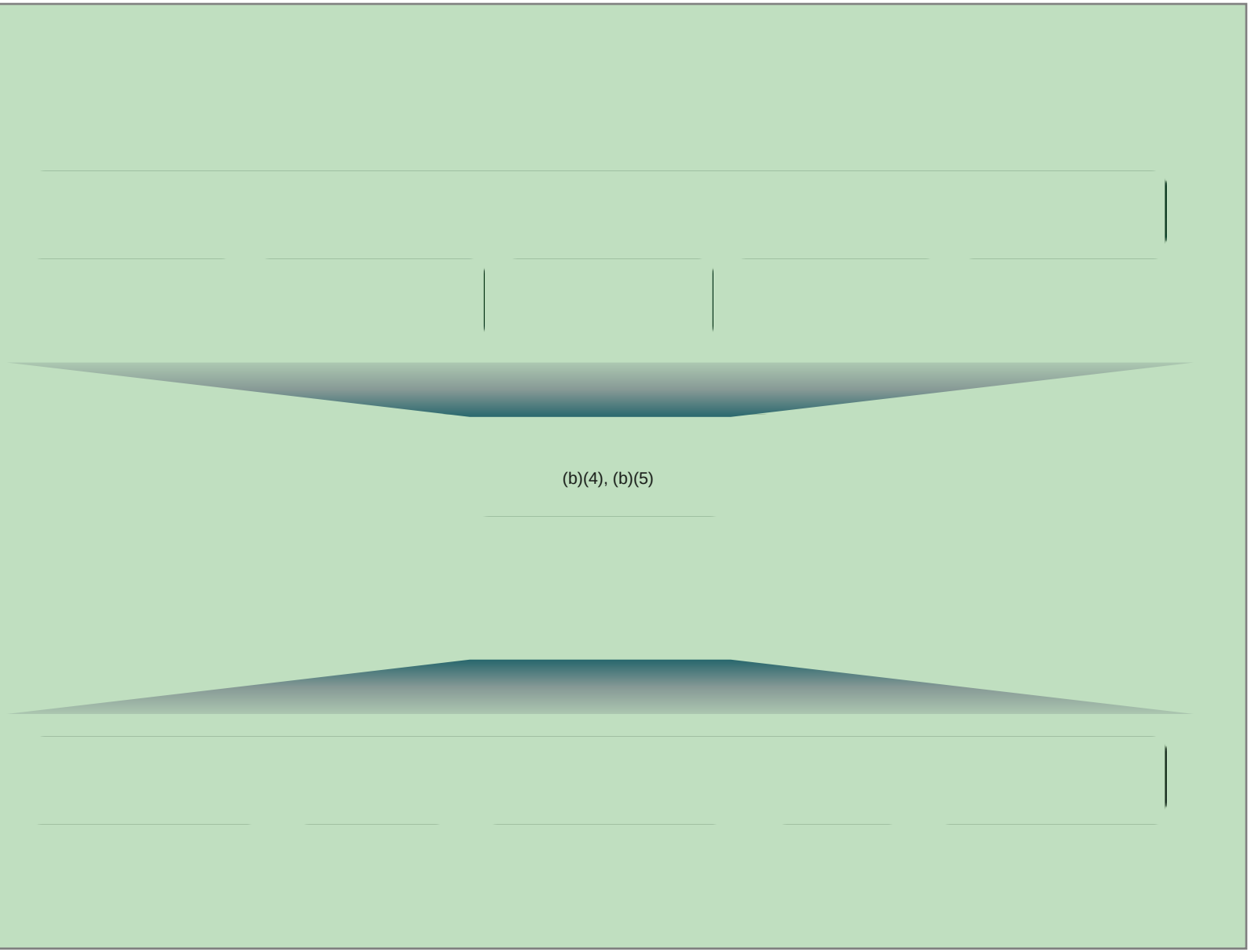

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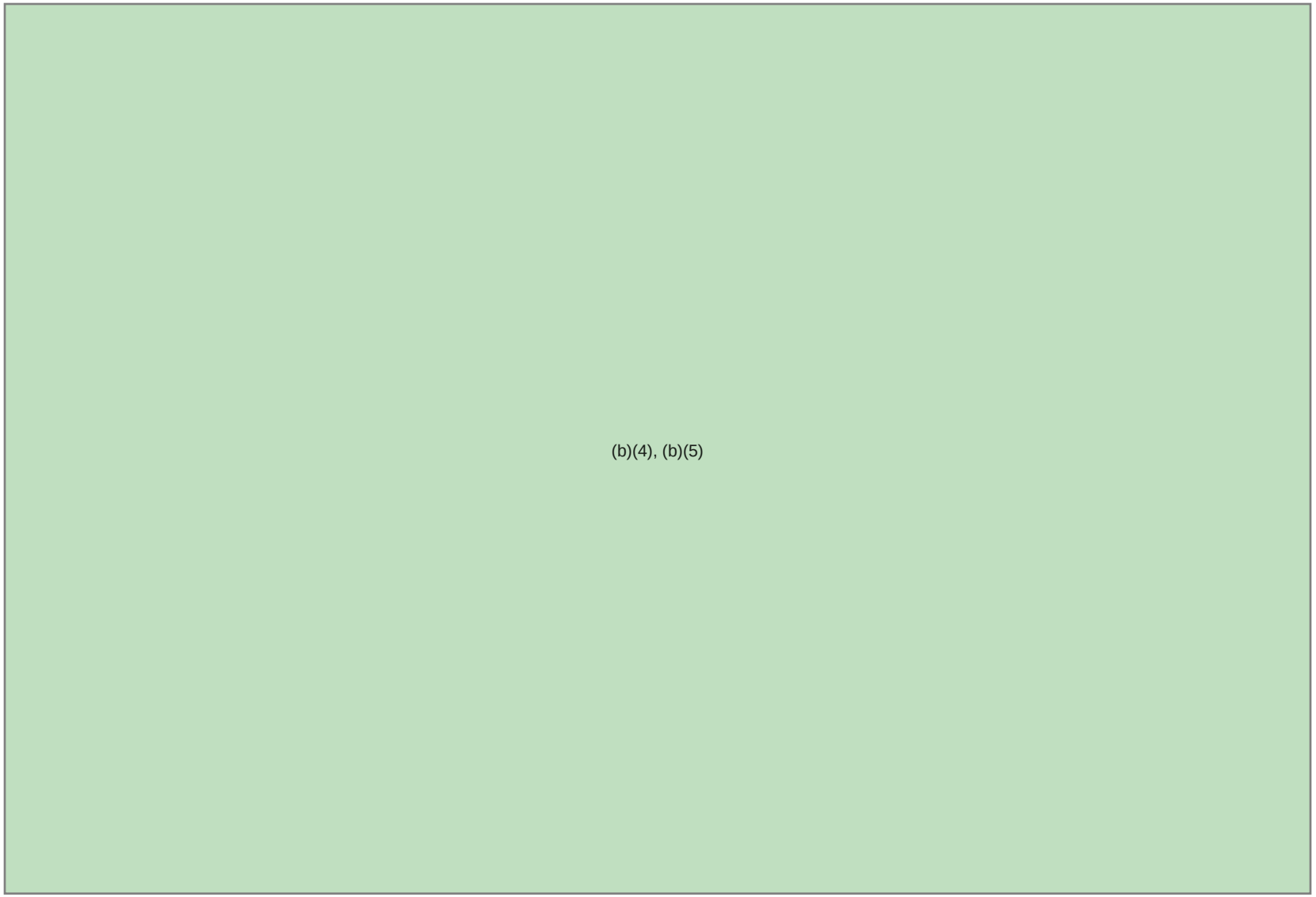
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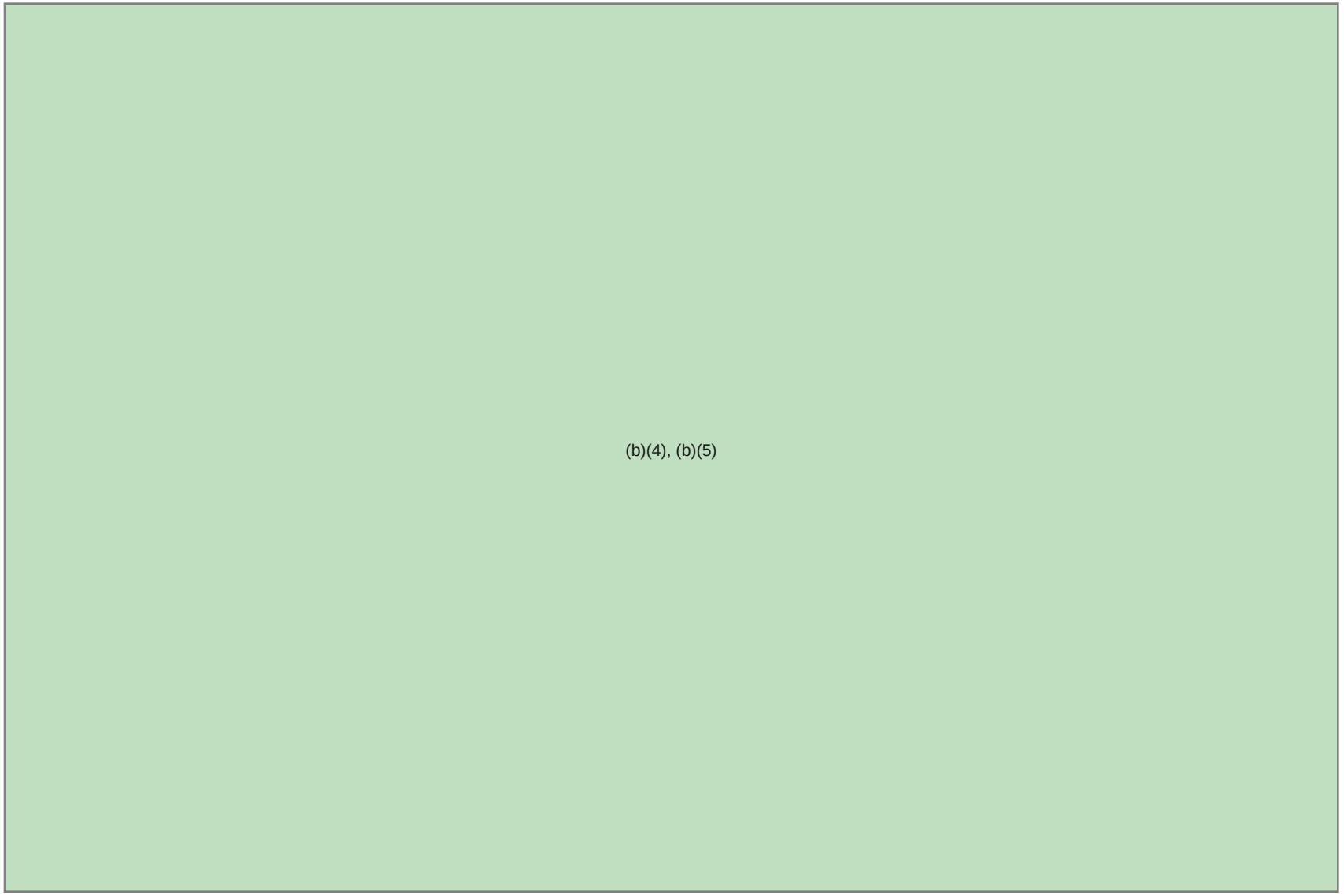
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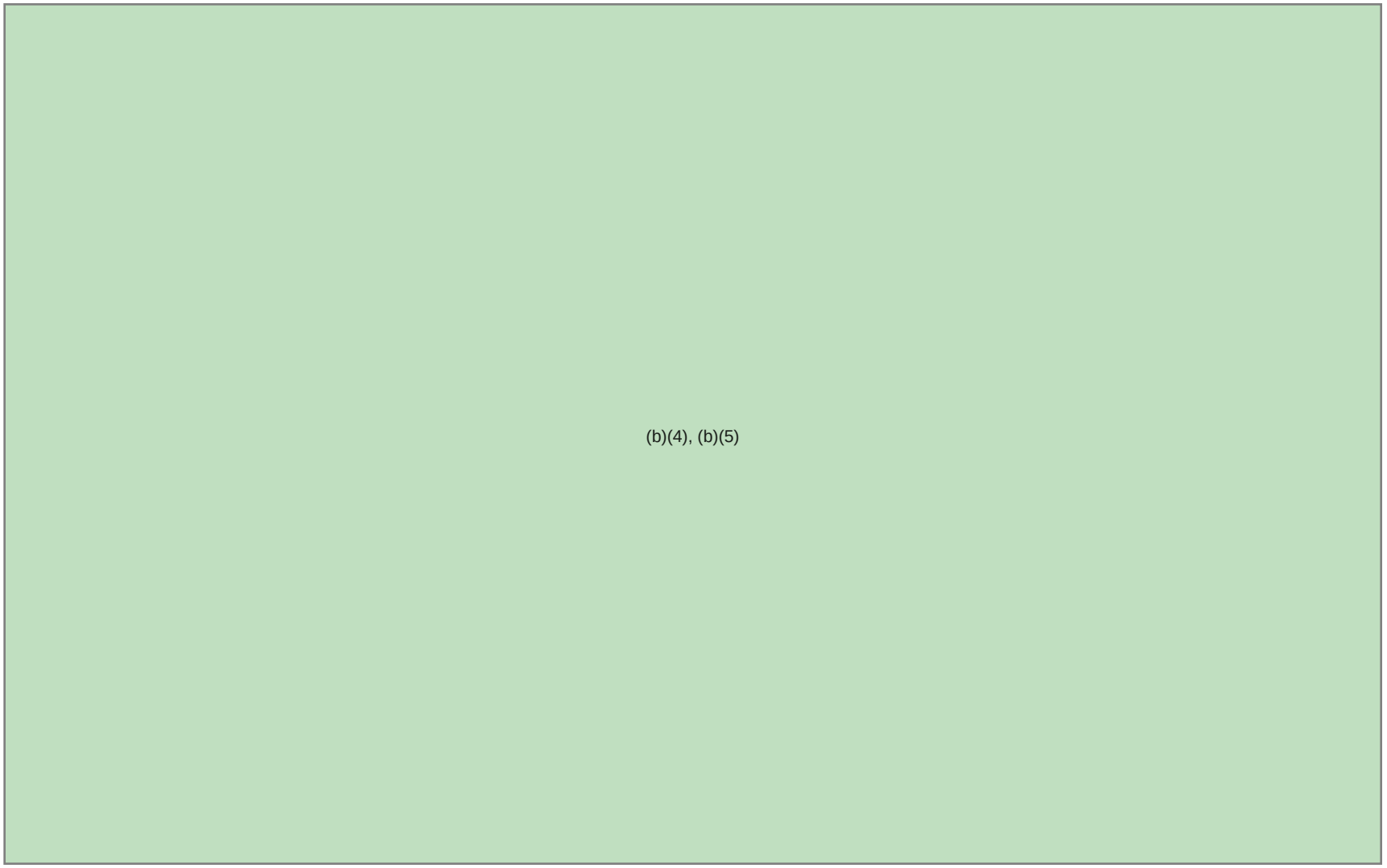
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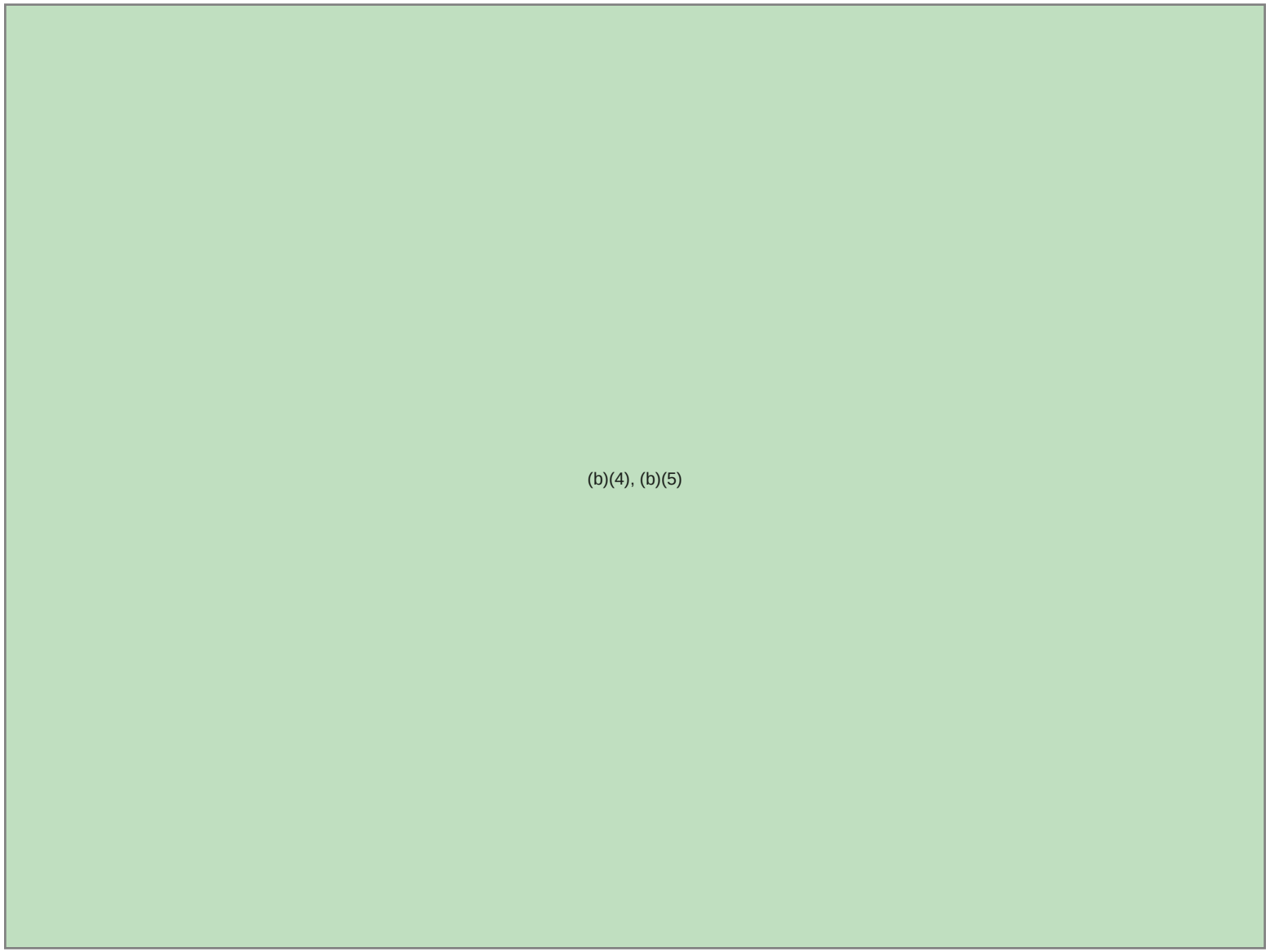
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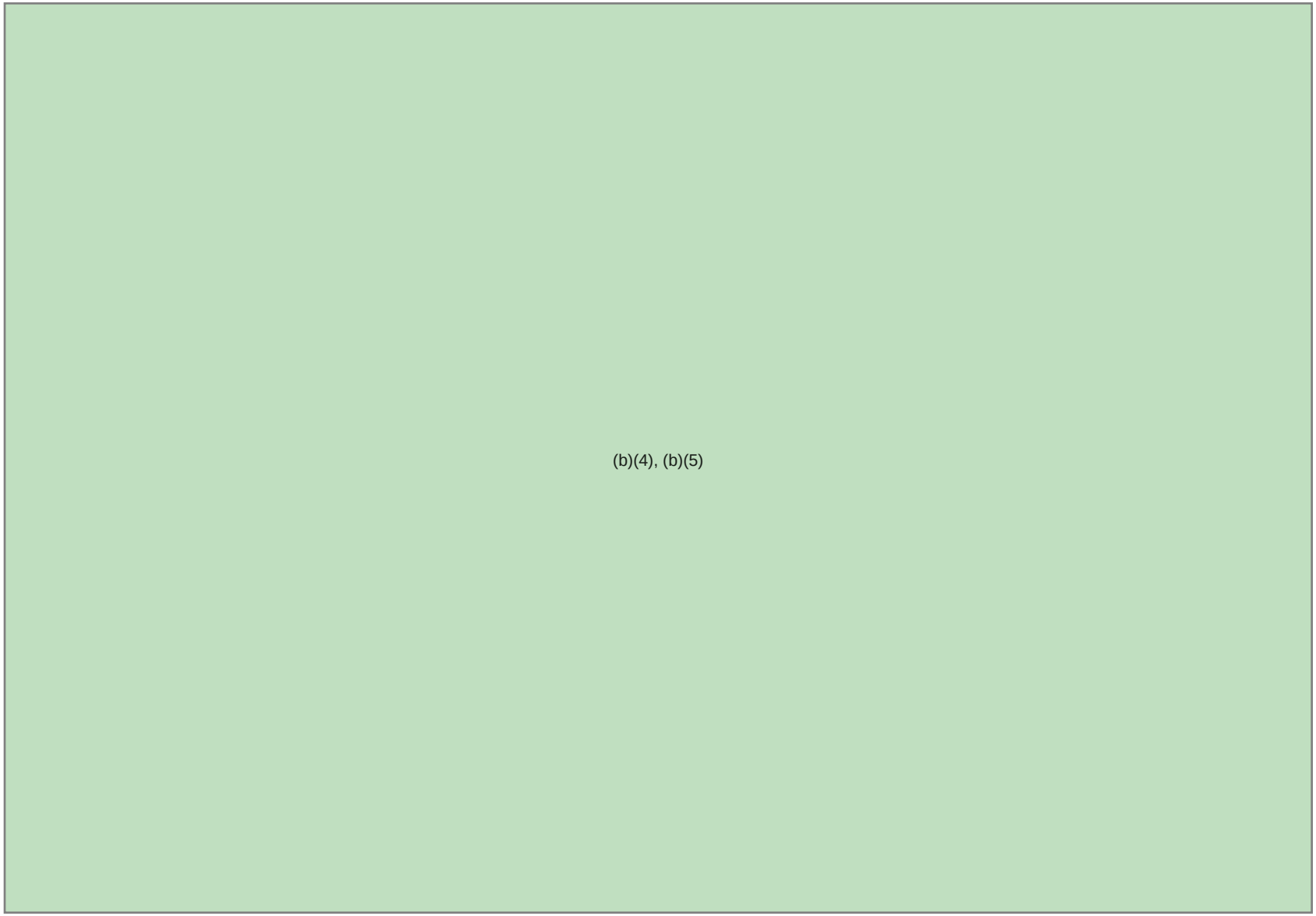
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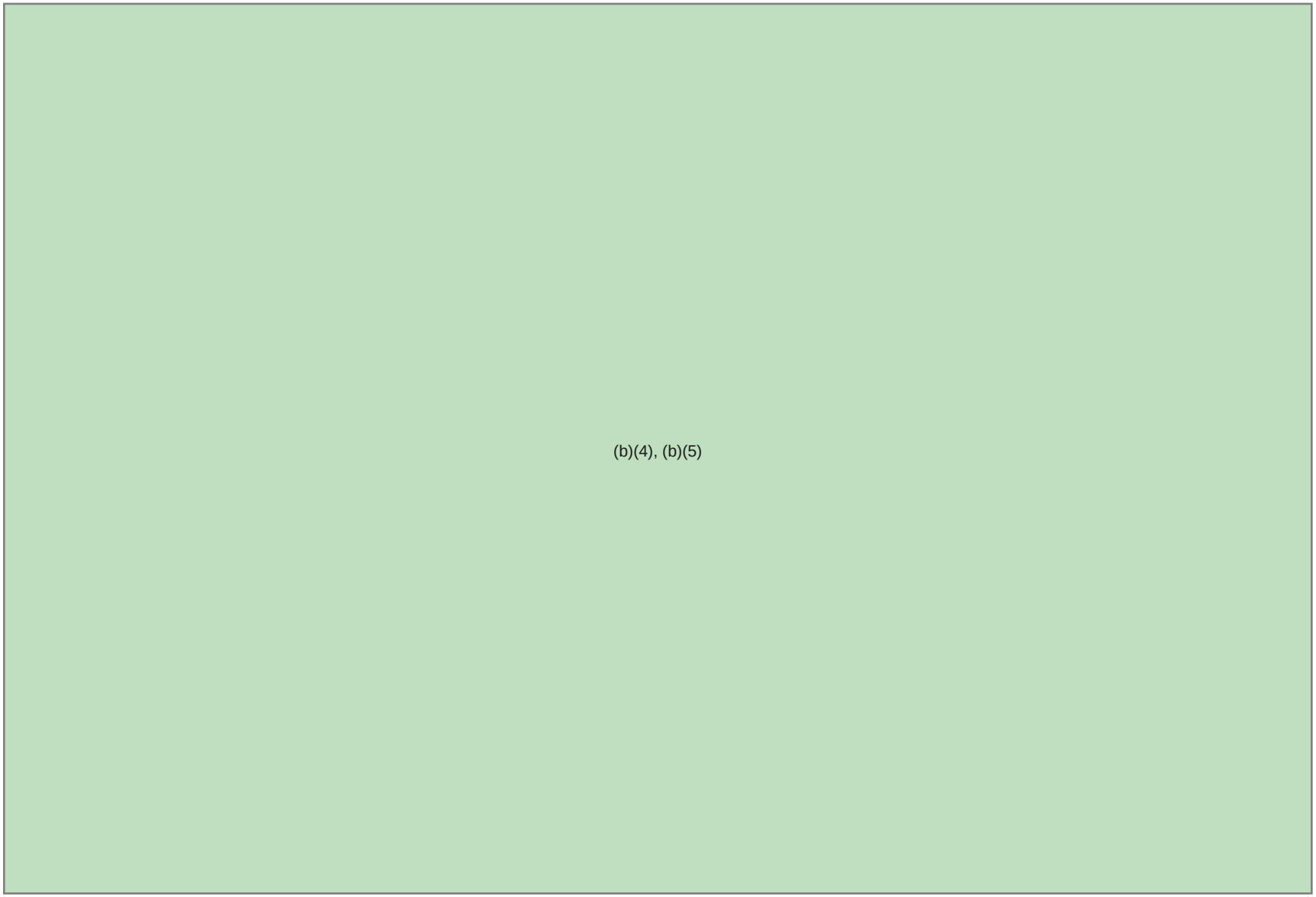
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The U.S. may conquer deep space with Russian engines (or Italian Low Energy Nuclear Reactors).

The United States has announced it is developing a heavy rocket for deep space expeditions. It might use Russian-made engines which is the result of house-cleaning in the U.S. space industry. On Wednesday, NASA reported that it had chosen a design for a new carrier rocket called the Space Launch System (SLS), which will send future American spacecraft on missions to explore Mars and the solar system

Future hope

E-plane -

12 mo. Endurance

(unmanned)

The ‘**Technology of the Future**’ is **nearly** Here !